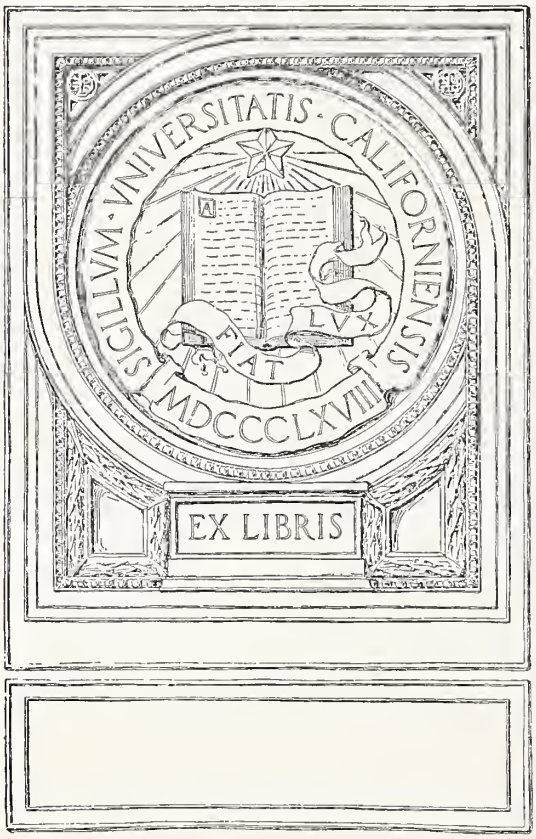
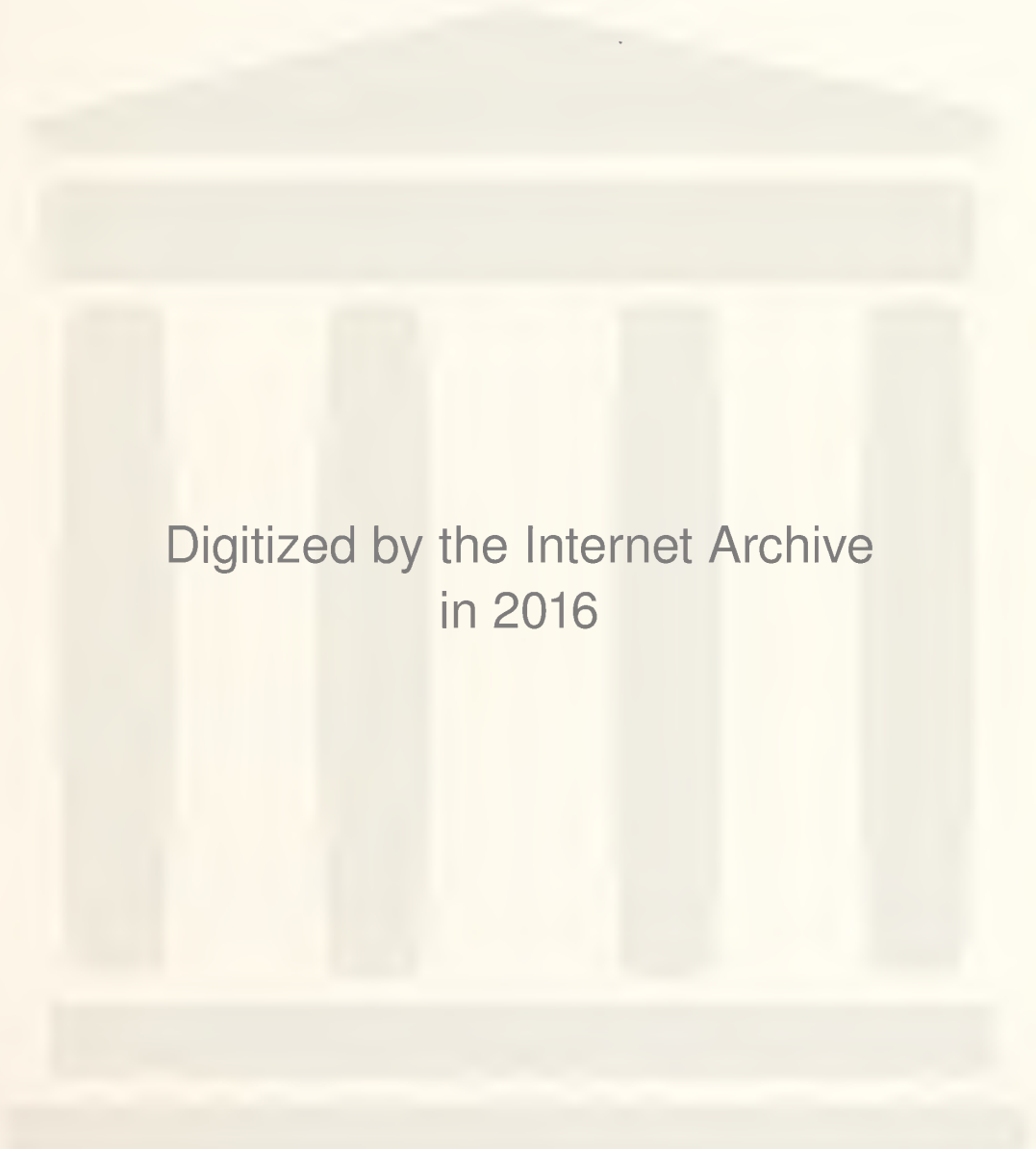
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"The Candidate for Cardiovascular Disease" Page 153
by Paul Dudley White, M.D.

"The Arizona Medical School Study in Retrospect" Page 41A
by Joseph F. Volker, D.D.S.

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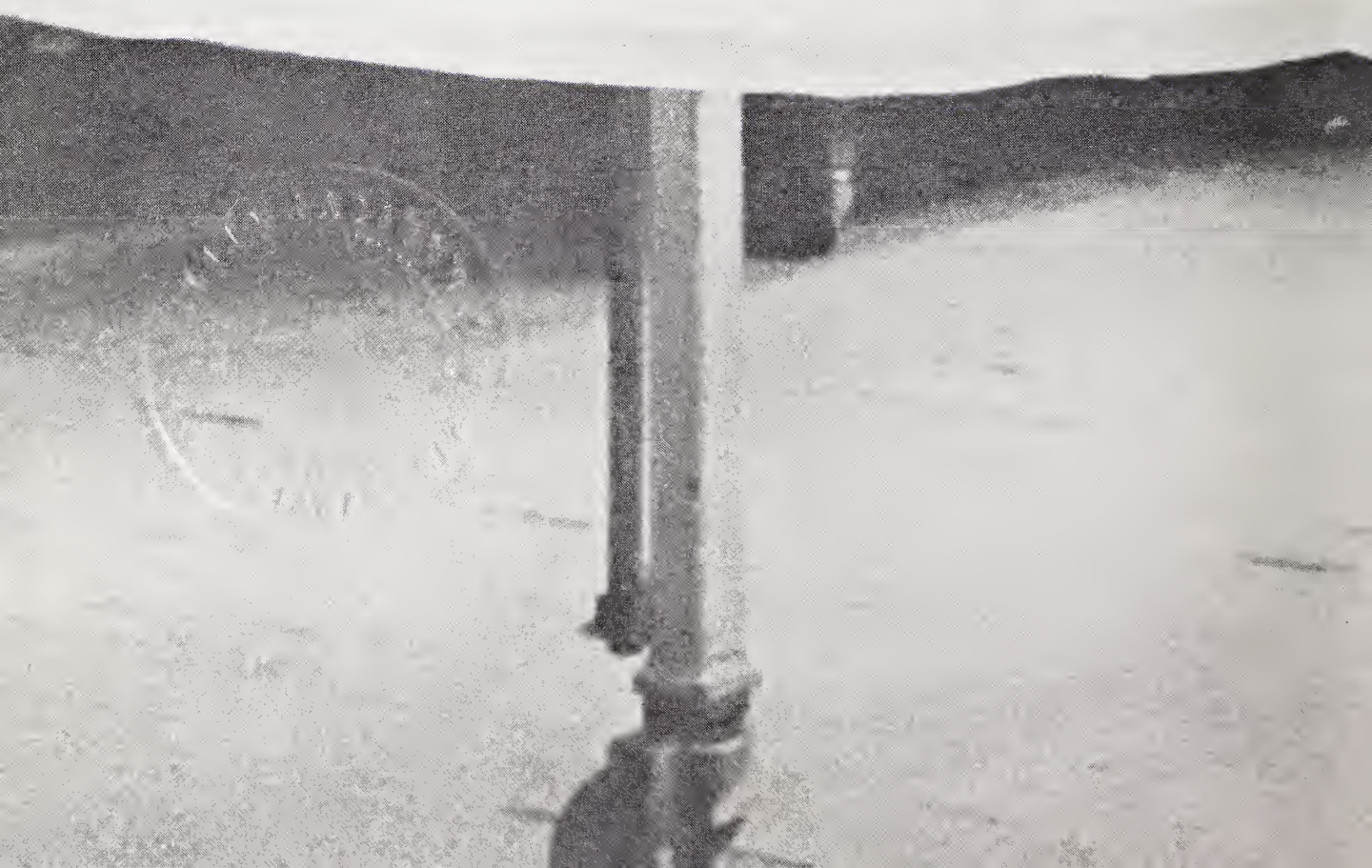
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References: (1) Minchew, B. H., & Cluff, L. E.: *J. Chron. Dis.* **13**:354, 1961. (2) Wallmark, G., & Finland, M.: *Am. J. M. Sc.* **242**:279, 1961. (3) Wallmark, G., & Finland, M.: *J.A.M.A.* **175**:886, 1961. (4) Welch, H., in Welch, H., & Finland, M.: Antibiotic Therapy for Staphylococcal Diseases, New York, Medical Encyclopedia, Inc., 1959, p. 14. (5) Hodgman, J. E.: *Pediat. Clin. North America* **8**:1027, 1961. (6) Bauer, A. W.; Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* **173**:475, 1960. (7) Petersdorf, R. G., *et al.*: *Arch. Int. Med.* **105**:398, 1960. (8) Goodier, T. E. W., & Parry, W. R.: *Lancet* 1:356, 1959.

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If you went to Goldwaters or Diamonds and ask them what their losses are, they would figure their total sales less their cash customers and base their annual loss on just the total of their credit accounts. This is just plain good business. Your losses should be calculated the same way. Deduct from your total practice those accounts that are paid by insurance and industrial, your so-called "cash" customers and then compute your losses on the total of the accounts to which you have extended credit. This loss figure will vary from doctor to doctor since insurance will pay a bigger proportion of a surgeon's practice than an allergist's or internal medicine specialist. Accounts you should refer to M & D for Budget Plan financing are those of unknown quality . . . the ones you know won't be "cash" or paid by insurance or industrial. Make it known to your patients that you offer a Budget Plan for Health by displaying your Membership Plaque and refer them to us with an Introduction Card. You will realize immediately the full amount of the bill less the small 10% service fee and without recourse.

To get back to that $2,700.00 a year . . . if you refer *just 1* $250 account per month to us, at the end of one year you would be sure of having an additional $2,700.00 which might make the difference between a successful or an unsuccessful year.

Remember, Doctor, a paid patient is a satisfied patient and your best practice builder.

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Board of Directors

MINUTES — APRIL 25, 1962

Meeting of the Board of Directors of The Arizona Medical Association, Inc.. held Wednesday, April 25, 1962.

EXECUTIVE COMMITTEE REPORTS

AMA Department of Medicine and Religion

Luncheon meeting held with guest Reverend Doctor Paul B. McCleave, newly appointed director of the Department of Medicine and Religion of the AMA. Doctor McLeave outlined the purposes of the newly created department.

1962 ARMA Dues

Authorized preparation of a resolution to be presented to the House of Delegates that ARMA dues be raised to $125.00 per active member per year, effective in 1963.

S. B. 154 — Practical Nurses — Qualifications

Concurred in position of the Arizona State Nurses Association opposing any changes in licensure of practical nurses as set forth in S. B. 154, amending Section 32-1627 A.R.S.

Report accepted.

Meeting of March 18, 1962

Community Service Award — A. H. Robins Company, Inc.

Received nominations by component county medical societies for the Annual Community Service Award presented by the A. H. Robins Company, Inc., including Jay L. Sitterly, M.D. (Flagstaff — Coconino), Paul B. Jarrett, M.D. (Phoenix — Maricopa), and Charles S. Powell, M.D. (Yuma — Yuma). Doctor Jarrett was selected to receive the award for 1962.

AMPAC

Reviewed previous directive of the Board of Directors that the Executive Committee proceed to initiate an Arizona Medical Political Action Committee, including the appointment of a president and treasurer. While there is an urgency regarding activation of this committee, it was pointed out that concentration has been given to the "crash program" currently operating designed to defeat the King-Anderson measure, H. R. 4222 (87th Congress).

It was moved by Doctor Leslie B. Smith, seconded by Doctor Paul L. Singer, and unanimously carried, that it be recommended to the next Board of Directors, to be constituted following the House of Delegates meeting April 27, 1962, that they make an early decision relative to AMPAC.

CENTRAL DISTRICT DIRECTOR RESIGNATION

Accepted resignation of Wallace A. Reed, M.D. (1961-63) as Central District Director (Maricopa) effective April 27, 1962.

BOARD OF MEDICAL EXAMINERS — TERM EXPIRATIONS

By motions regularly made and unanimously carried, the following nominations were made covering the terms of three (3) members of the Board of Medical Examiners expiring July 1, 1962, each for a term of three (3) years as provided by statute, the first nominee in each group to be recommended to the Governor as this Association's first choice:

MARICOPA COUNTY

Carlos C. Craig, M.D., W. Albert Brewer, M.D., and Paul B. Jarrett, M.D., all of Phoenix.

PIMA COUNTY

W. R. Manning, M.D., James E. O'Hare, M.D., and Orin J. Farness, M.D., all of Tucson.

COCONINO COUNTY

Roy O. Young, M.D. (Flagstaff — Coconino), Joseph E. McNally, M.D. (Prescott — Yavapai), and John F. Currin, M.D. (Flagstaff — Coconino).

BENEVOLENT AND LOAN FUND COMMITTEE

National Foundation Appointment

Donald K. Buffmire, M.D., of Phoenix, was appointed, and has accepted, a second year term as a member of The National Foundation's Health Scholarship Committee of Arizona. Received.

VNB Trust No. 3068

Valley National Bank, associate with its administration of the trust account No. 3068 (Benevolent and Loan Fund — Student Loans), reported income, deductions, and credits for the year 1961 for information of the Association applicable to income tax returns. It has been determined by counsel that, under the Association's "non-profit" status and especially since the student loan portion of the operation being adminstered can be construed as "charitable", no accounting will be necessary involving income tax returns.

Regarding the "Benevolent" portion of the operation of the Benevolent and Loan Fund, if and when it becomes operative, attention is directed to the fact that the Association was granted exemption under the "Internal Revenue Code of 1939". The corresponding exemption statute under the Internal Revenue Code of 1954 is Section 501 (c) (6), which provides that business leagues, chambers of commerce, real estate boards, or boards of trade not organized for profit and *no part of the net earnings of which inure to the benefit of any private share holder or individual* are exempt from federal taxes. The regulation under said Section (Reg. Section 1.501(c) (6)-1) provides that the activities of such an organization should be directed to the improvemeint of business conditions of one or more lines of business as distinguished from the performance of particular services for individual persons. It would seem clear that any financial aid given to the members of the Association would be the performance of particular services for individual persons. The use of the Benevolent and Loan Fund as a part of the Association should be limited by the foregoing restriction. Noted.

CENTRAL OFFICE ADVISORY COMMITTEE

Financial Report

The Treasurer reviewed in detail the Statement of Income and Expenditures for the period to and including March 31, 1962.

The Editor-in-Chief reviewed the Statement of Income and Expenditures associate with the publication of Arizona Medicine.

It was moved by Doctor Neubauer, seconded by Doctor Beaton, and carried that the Board of Directors go on record as supporting the budgetary increases included in resolution submitted by the Treasurer to be presented to the House of Delegates. Doctor O'Hare voted in the negative.

It was moved by Doctor Dudley, seconded by Doctor Singer, and unanimously carried that the report of the Treasurer be accepted.

Membership Classification Change

Vernon L. Mahoney, M.D. (Tucson), active—granted dues exemption effective January 1, 1963, account attainment 70 years of age.

Dues Delinquents

Effective April 1, 1962, nineteen (19) members became delinquent in the payment of their 1962 dues, including thirteen (13) members of the Maricopa County Medical Society, one (1) of the Pima County Medical Society, four (4) of the Pinal County Medical Society, and one (1) of the Yuma County Medical Society. Report received.

Central Towers Lease Termination

Counsel reports execution of Central Towers lease termination agreement by Central Towers Building, Inc. and this Association effective March 31, 1962 for the consideration and payment of $1,294.71, said agreement having been forwarded to the Maricopa Recorder's office for proper recording. Report received.

HISTORY AND OBITUARIES COMMITTEE

ARMA Medical Historical Records

In response to suggestion of the University of Arizona by letter dated November 8, 1961, received from Bernard L. Fontana, Field Historian, that the historical records of this Association be transferred and stored in its library, thereby making them available under whatever restriction to its research program entitled "Arizona Collection for Western and Borderlands Research," the History and Obituaries Committee of this Association submits its report. The Library and Archives of the State of Arizona would likewise be interested in receiving microfilm copies should it be determined that such material be transferred.

Relative to transferring our historical records, counsel advised that there have been successful lawsuits around the country regarding families which have been blasphemed. The rule is not clear as to where the point occurs. Counsel cannot render an opinion at the moment; but in the

event it is determined to transfer the records to the University library, he would like to have the opportunity to review the papers; certainly, a restriction should be placed upon their use.

It was moved by Doctor Singer, seconded by Doctor O'Hare, and unanimously carried that the historical materials of this Association remain in its possession.

Pima County Medical Society

Pima County Medical Society received a similar request from the University of Arizona suggesting filing of its historical records with the university library and sought the assistance of this Association to have the matter legally reviewed. Question had been raised as to cost of such evaluation and determination as to which organization should assume such expenditure. Inasmuch as a determination has now been made regarding the historical records of this Association, there appears to be no need for further consideration of the Society request.

LEGISLATIVE COMMITTEE

Basic Science Law Amendment

Counsel reports that it was not possible to complete a proposed amendment to the Basic Science Statute as authorized due to the fact that an unanticipated development arose wherein it was expressed desirable to cover "partial" reciprocity recognized and granted by the Arizona State Board of Examiners in the Basic Sciences but not covered in the existing statute. As this appeared to be involved, and due to the lateness of its recognition following completion of the amendment initially desired, it was considered advisable not to attempt to introduce such measure during the recently concluded sesson of the 25th Legislature. It was determined that such measure shall be given priority with the convening of the 26th State Legislature, January, 1963.

AMA Chiropractic Survey

The American Medical Association has undertaken a national survey dealing with the practice of chiropractic. Distributed some time ago was a detailed questionnaire associate with the study wherein certain information was sought regarding the existing practice of chiropractic in the several states. This questionnaire was responded to. In the interim, The National Chiropractic Association, cognizant of the study being undertaken by AMA, prepared a questionnaire of its own, distributed among its chiropractors attempting to refute much of the information anticipated to be reported upon by the several states. This is for information only, there being no indication for action at this time.

AMA Legal Conference

The Law Department of AMA conducts a conference in Chicago over a two-day period especially designed for the benefit of Association legal counsels and executive secretaries. They commenced in 1956. In 1962, it will be held at the Drake Hotel in Chicago, Friday and Saturday, May 18 and 19, 1962. Counsel of the Association has attended one of these conferences. The Executive Secretary has attended none inasmuch as in the past they happened to fall within the period before and after, or closely associate with, the annual meeting, making attendance impossible. Council indicated that he anticipated no other business in the Chicago area at the time of this meeting; accordingly, it does not appear he will be in a position to attend. With budget restrictions apparent, the Executive Secretary, while expressing the importance of this particular meeting, considered it impracticable to participate hoping that each executive may ultimately attain some of the benefits through review of any reporting coming out of the session scheduled.

MEDICAL ECONOMICS COMMITTEE

Medicare Contract — DA-49-007-MD-806

It was regularly moved and unanimously carried that there be authorized, executed two (2) documents, (a) a Three-Party Contractors' Release, (b) a Three-Party Contractors' Assignment of Refunds, Rebates, Credits, and Other Amounts, (c) a Cumulative Claim and Reconciliation Statement (involving an expenditure of $2,089,926.12) covering Medicare Contract No. DA-49-007-MD-806 fof the period December 7, 1956, to February 28, 1961.

Medicare Contract — No. DA-49-192-MD-64.

Presented for execution on the part of this Association, executed by the Fiscal Administrator, Arizona Blue Shield Medical Service, is a supplemental agreement providing Annex I, contract modification and addendum No. 4 incorporated into the Medicare Manual and Schedule of Allowances (Appendix "E") Code No. E-4697, Tracheloplasty (Shirodkar or Lash) $75.00, a new code procedure to the Female

Genital Section in the sub-section entitled "Uterus Cervix Uteri," page 180 of the Manual.

On motion regularly made and unanimously carried, this supplemental agreement was authorized executed.

House Resolution Number Eight

The Board of Directors, in meeting held February 4, 1962, received from its Medical Economics Committee a recommendation referable to House Resolution Number Eight (1961) suggesting an actuarilly sound program to combine Medical Student Loan and Voluntary Physicians Disability and Retirement Plan under one fund. Action was deferred awaiting result of the 1962 proposed National legislation such as the Keogh-Simpson law (HR 10), and Professional Corporation Legislation enactment in the State of Arizona. Inasmuch as the latter has been enacted, the Board determined there appears no further action to be taken at this time; accordingly, the subject was tabled.

California-Western Group Life Insurance

It was announced by the California-Western States Life Insurance Company that it has agreed to open enrollment for members of the Association under age fifty (50) between the period April 25 to, and including, May 31 provided at least one hundred (100) applications are received from doctors of the State. This company, of course, is underwriting the Association-sponsored group life insurance program. Received.

PROFESSIONAL COMMITTEE

The Board, by motion regularly made by Doctor O'Hare, seconded by Doctor Singer, and unanimously carried, accepted the report of the Professional Committee, including the following items: (a) resignation of Lowell C. Wormley, M.D., as member of the Committee by letter dated February 8, 1962; (b) recommended sponsorship of the Annual Cancer Seminar scheduled to be conducted at Hotel Westward Ho, Phoenix, March 15 through 17, 1962 to qualify for attendance credits (AAGP); (c) Arizona Cancer Society reports establishment of voluntary Tumor Registries in Arizona with the cooperation of the Arizona State Department of Health and further seeks approval of this Association in the establishment of a one-day workshop with hospital personnel to review the program and set forth the objectives to achieve uniformity in the process — official request of ACS not in hand; (d) report of the activities of its Subcommittee on Civil Defense and Safety; (e) recommended endorsement of the objectives of the Medic Alert Foundation identifying individuals involved in emergencies as to specific illnesses of the individual; (f) recommended counsel opinion and endorsement of S.B. 208 dealing with Registered and Practical Nursing and H.B. 89 providing for the operation of shelter care homes; (g) recommends support of S.B. 237 providing for the certification of psychologists; (h) recommends approval of the WICHE program comprising a ten-day course available to physicians practicing without the field of psychiatry dealing with problems of mental health; (i) report on the Eighth Annual Conference of Mental Health representatives of state medical associations held in Chicago February 2-3, 1962 and alerting Arizona to the Congress on mental health to be held in Chicago October next; (j) recommended that the Air Pollution Panel addressing the Professional Committee February 11, 1962, present its program for the edification of the Board of Directors.

Civil Defense Report

Doctor Earl J. Baker, Chairman of the Subcommittee on Civil Defense and Safety of the Professional Committee, submitted a report on organized medicine and the Civil Defense medical care program including recommendations and two resolutions to be introduced into the House of Delegates during this session. It was directed that the resolutions be prepared in proper form and introduced at this session of the House; however, as regards the balance of the report and recommendations, it was directed that they be referred to the Professional Committee for its review and any recommendations following routine protocol.

SCIENTIFIC ASSEMBLY COMMITTEE

Convention Program Grants

Eli Lilly and Company reports adoption of a plan to be known as the Lilly State Convention Program Grants which would provide funds for honoraria and expenses of qualified speakers to be selected by the program committee of the respective associations. For this association, the grant would be $250.00. Accepted.

Medical Speakers Library

Medical Speakers Library Service of Los An-

geles seeks authorization to tape record only the scientific presentations associate with the Annual Meeting of this Association for its audio-educational library serving physicians in practice to provide them with an additional means for continuing postgraduate medical education. Inasmuch as arrangements already have been concluded for this meeting, it was suggested that the offer be referred to the Scientific Assembly Committee for consideration in 1963.

COMMUNICATIONS

Arizona Association of Student Nurses

Arizona Association of Student Nurses seeks financial assistance in its organization which represents student nurses of the six nursing schools in Arizona. Its National Convention is scheduled to be held in Detroit, Michigan, May 18 through 21, 1962, and being without funds, solicits support. Due to financial limitations of this organization, and inasmuch as provision has not been made previously, the request was denied.

Maricopa County Association of Medical Assistants

The Maricopa County Association of Medical Assistants seeks affiliation with the National Association of Medical Assistants, which latter organization has the approval of the American Medical Association. An approval of this Association is requested to achieve the objective. Approved.

Sears-Roebuck Foundation

The Sears-Roebuck Foundation, through its member, Fred A. Tucker, M.D., representing the States of Arizona, California, Idaho, Nevada, Oregon, Utah, and Washington, seeks nominations (three (3) names) to fill the anticipated vacancy on its Board to succeed Doctor Wesley Hall of Reno, whose term of four (4) years will expire this year. It was determined to refer this matter to the President who will select three members whose names will be forwarded as this Association's nominees.

Arizona Science Fair

The Central Regional Science Fair acknowledges, with grateful appreciation, this Association's contribution ($50.00) toward support of the Ninth Annual Central Arizona Regional Science Fair here April 6-7 on the Arizona State University campus. Received.

OTHER BUSINESS

Maricopa County Hospital Development Association

Dermont W. Melick, M.D., presented his views associate with the fund drive by the Maricopa County Hospital Development Association suggesting a "Professional Career Commitment" approach on the part of the physicians' expected donations. Received.

Arizona State Welfare Department

Commissioner Fen Hildreth of the Arizona State Welfare Department advised that June 1, 1962, resulting from recent legislation enacted, the Welfare Department will institute a new program: "Aid to the Permanently and Totally Disabled," which will be a part of a Federal matching program in the administration of such aid. It is expressed desirable that a medical review team, including appointees from the various counties of the State, be activated for the purpose of examining potential beneficiaries to determine "permanent or total disability." This will include, of course, a medical examination which will be required to be undertaken by a local physician in the community area of the beneficiary. While the Welfare Department subscribes to "freedom of choice of physician," in this instance, and on the basis of past experience, it would not wish to have an attending physician make such decision, but rather one who will review a case objectively and make a medical determination without taking into consideration an individual's economic circumstances or tend toward being benevolent at the expense of the State.

Doctor Yount moved that this matter be referred to the Professional Committee for study before the next meeting and make our disposition at that time. The motion lost.

It was regularly moved by Doctor O'Hare, seconded by Doctor Beaton, and carried that we accept the panel plan as outlined by Fen Hildreth and that the Professional Committee, as requested, provide the Welfare Department with a list of names. Two opposed.

Received from Commissioner Hildreth were copies of a revision of criteria for determining total and permanent disability allowing for free choice of a physician by the patient. The commissioner advised that this matter has been discussed with Doctor Hamer, who elaborated thereon.

It was regularly moved, seconded, and carried that this matter be referred to the Professional Committee for review and report to the Board of Directors.

Women's Auxiliary

Mrs. Frederick W. Knight, President-elect of the Woman's Auxiliary to The Arizona Medical Association, Inc., presents the organization's proposed program for the year 1962-63, including a request for assistance in the form of an appropriation of $1,000.00 to carry out its activities. It was regularly moved, seconded, and unanimously carried that the report be accepted.

Arizona State Insurance Council

Doctor Schwartzmann, Chairman of the Ad Hoc Committee for Liaison with the Arizona State Insurance Council, submitted its report covering the joint meeting with representatives of the Arizona State Hospital Association and the Arizona State Insurance Council held January 24, 1962. Inasmuch as Doctor Schwartzmann was not in attendance at this point in the meeting, it was determined by motion regularly made, seconded, and unanimously carried that no action be taken, deferring consideration until the next meeting of the Board of Directors to which Doctor Schwartzmann shall be invited to be present making himself available to the submission of questions on the subject.

AMA Annual Meeting

It was regularly moved, seconded, and unanimously carried that the President-elect be authorized to attend the Annual Meeting of the American Medical Association to be held in Chicago, June 25 through June 29, 1962, representing this Association and at its expense.

H. R. 4222 — King-Anderson

Doctor Leslie B. Smith, President, reviewed progress being made in line with the program of this Association referable to H. R. 4222 of the 87th Congress providing for hospital expenses, skilled nursing home care, etc., for aged beneficiaries under the Old Age, Survivors, and Disability insurance program to be financed under the existing Social Security system.

Paul L. Singer, M.D.
Secretary

THE COST OF MEDICAL CARE

How the medical care dollar is spent compared with 20 years ago

	20 Years Ago	*Today*
Health Appliances	6c	6c
Drugs	22c	20c
Dentists	14c	11c
*Physicians	30c	25c
*Hospitals	17c	26c
*Health Insurance	5c	7c
All Other	6c	5c

*Analysis:

Doctors get less of the health dollar today than 20 years ago.

Hospitals get more mainly because so much of hospital costs are in wages (about 70%). There are two employees per patient on the average . . . and payrolls are up 65-75% in 20 years.

128 million people are now covered by health insurance.

(from AMA's publication, "The ? Cost of Medical Care")



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Each capsule contains:	
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Vitamin B_{12} Crystalline	4 mcgm.
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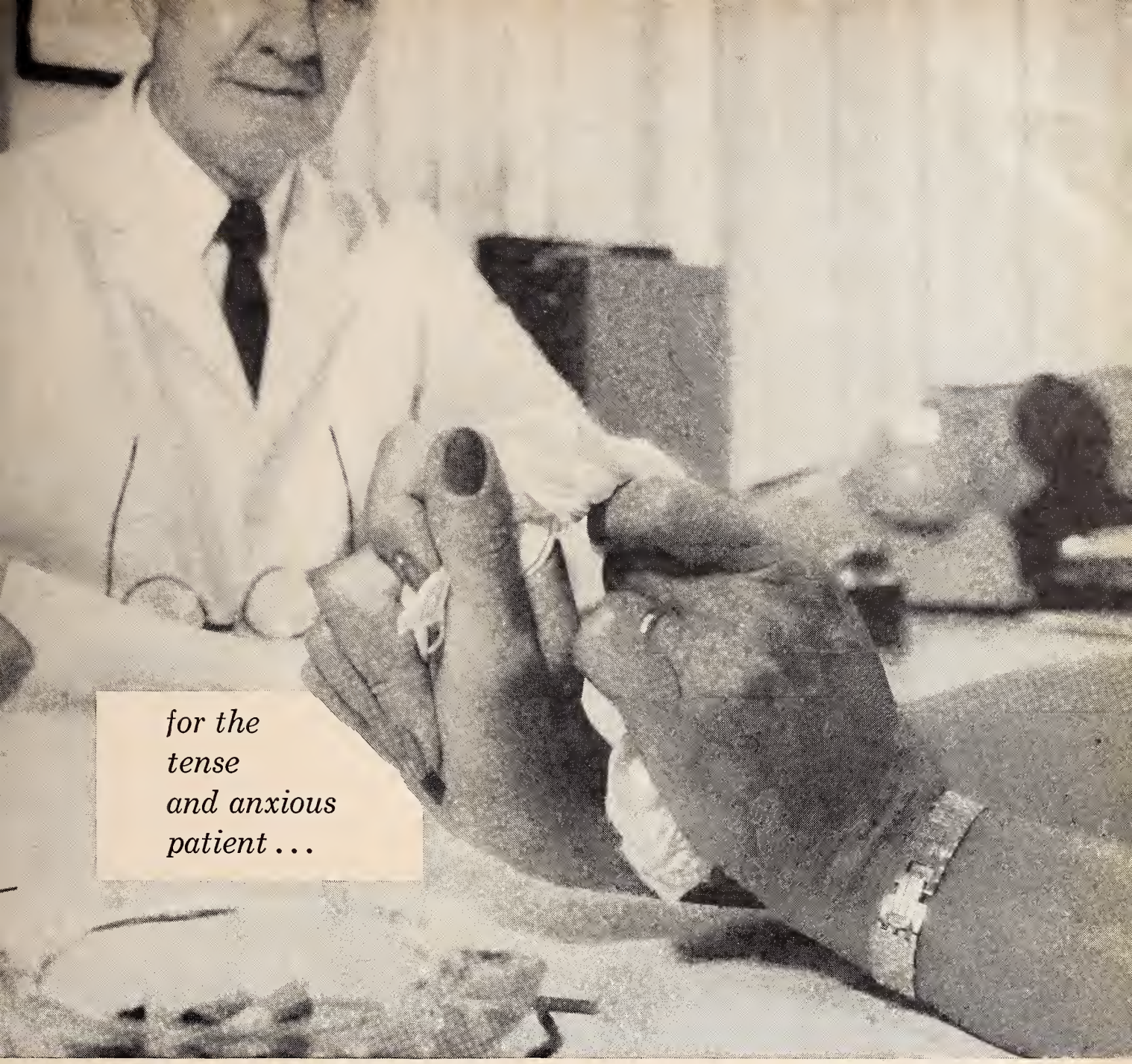
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Added advantages for long-term or difficult patients. Salutensin will reduce blood pressure (both systolic and diastolic) to normal or near-normal levels, and maintain it there, in the great majority of cases. Patients on thiazide/rauwolfia therapy often experience further improvement when transferred to Salutensin. Further, therapy with Salutensin is both economical and convenient.

Each Salutensin tablet contains: 50 mg. Saluron® (hydroflumethiazide), 0.125 mg. reserpine, and 0.2 mg. protoveratrine A. See Official Package Circular for complete information on dosage, side effects and precautions.

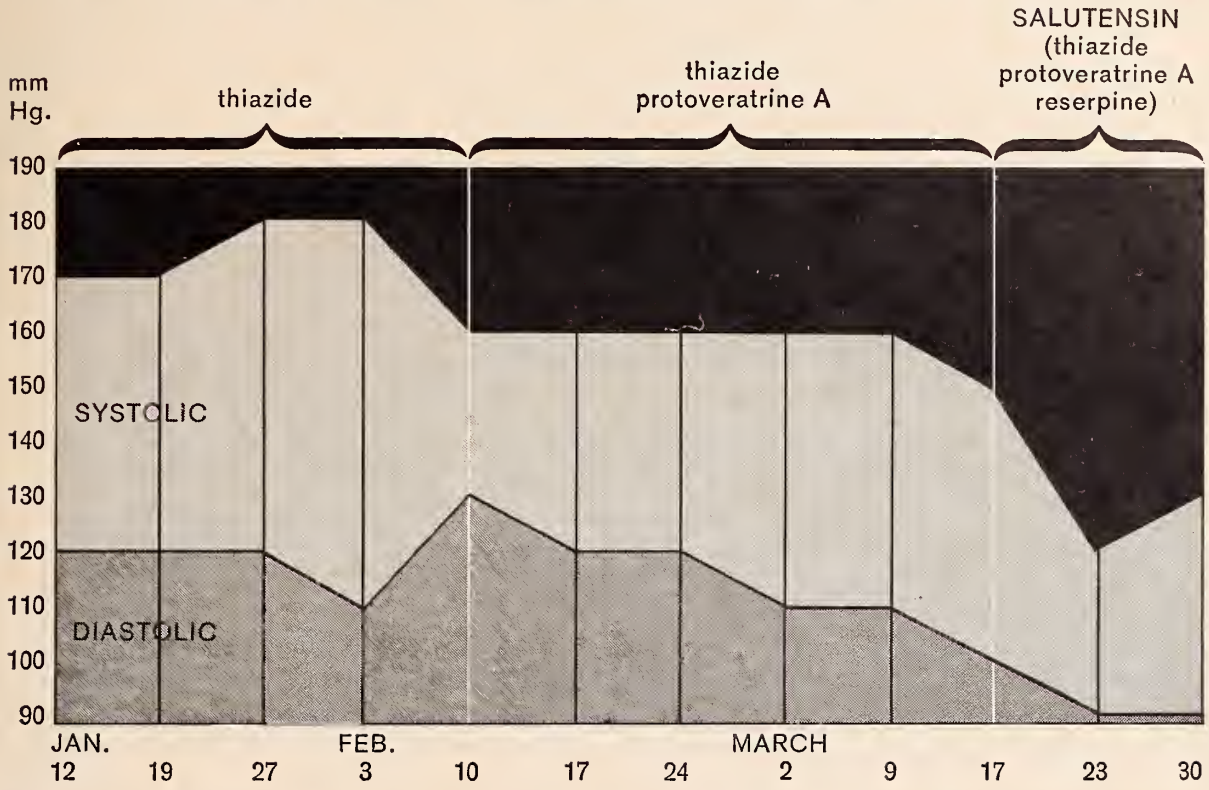
Supplied: Bottles of 60 scored tablets.

References: 1. Fries, E. D.: In Hypertension, ed. by J. H. Moyer, Saunders, Phila., 1959 p. 123. 2. Fries, E. D.: South M. J. **51**:1281 (Oct.) 1958. 3. Finnerty, F. A. and Buchholz, J. H.: GP **17**:95 (Feb.) 1958. 4. Gill, R. J., et al.: Am. Pract. & Digest Treat. **11**:1007 (Dec.) 1960. 5. Brest, A. N. and Moyer, J. H.: J. South Carolina M. A. **56**:171 (May) 1960. 6. Wilkins R. W.: Postgrad. Med. **26**:59 (July) 1959. 7. Gifford, R. W., Jr.: Read at the Hahnemann Symp. on Hypertension, Phila. Dec. 8 to 13, 1958. 8. Fries, E. D., et al.: J. A. M. A. **166**:137 (Jan. 11) 1958. 9. Ford, R. V. and Nickell, J.: Ant. Med. & Clin. Ther. **6**:461, 1959.

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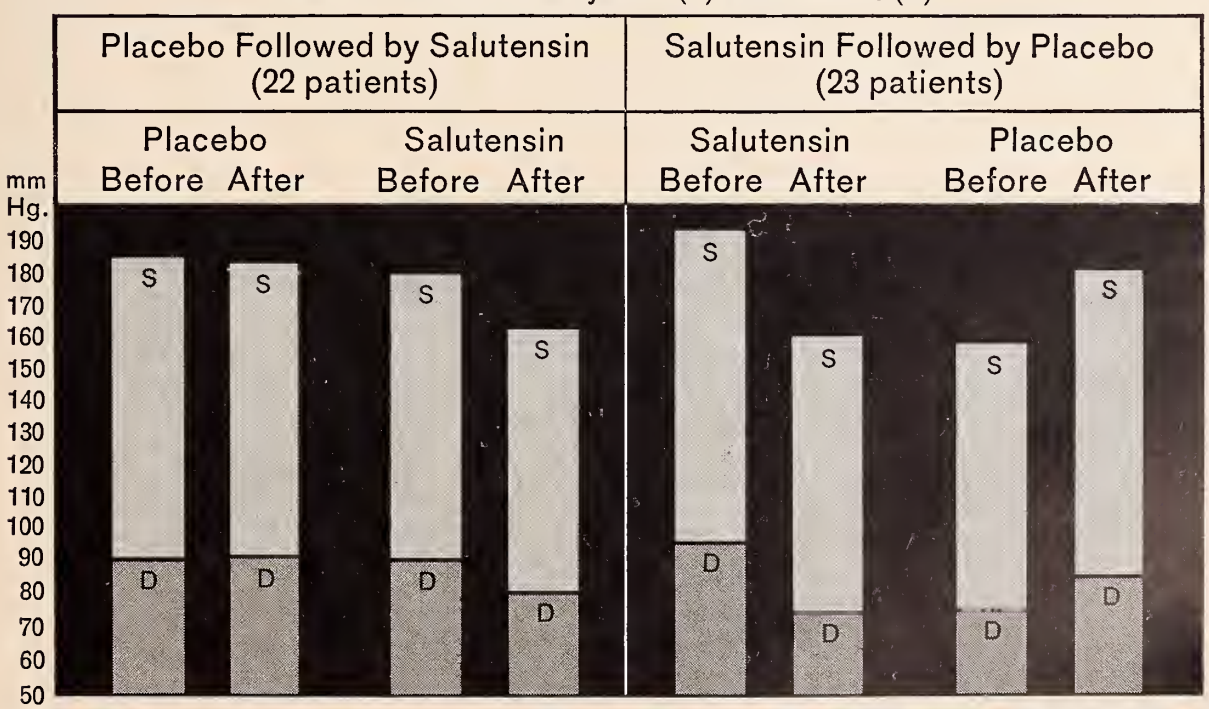
11 WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS BY SERIAL ADDITION OF THE INGREDIENTS IN SALUTENSIN IN A TEST CASE

(Adapted from Spiotta, E. J.: Report to Department of Clinical Investigation, Bristol Laboratories)



3½ WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS USING SALUTENSIN FROM THE START OF THERAPY IN A "DOUBLE BLIND" CROSSOVER STUDY

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In this "double blind" crossover study of 45 patients, the mean systolic and diastolic blood pressures were essentially unchanged or rose during placebo administration, and decreased markedly during the 25 days of Salutensin therapy. (Smith, C. W.: Report to Department of Clinical Investigation, Bristol Laboratories.)

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The Candidate for Cardiovascular Disease

Paul Dudley White, M.D.

In the past forty years cardiology has developed through the efforts of the author and other dedicated men. Recent research in heart disease has been greatly aided by public and private agencies. With increasing knowledge of the genetic and environmental factors responsible for cardiovascular disturbance the candidate for cardiovascular disease may be more readily recognizable and his disease process prevented.

LADIES AND GENTLEMEN. Cardiology wasn't a good word when I started my career in the field. In fact, we had to keep it quite dark if we were interested in cardiology. It's only in the last two or three decades that it, that is, the word, has become respectable. Once in a while we could say that we were internists interested especially in cardiovascular disease, but we couldn't use the word cardiology, not for a good many years. Many of my teachers and associates were sure that I was ruining my future by going into such a small and narrowing field, that I'd become narrow like the field itself. That was about 1920. But I didn't tell you last night as I should have, when I was recounting somewhat the history of the evolution of cardiology, about its very beginning and its very end — I gave you the intermediate steps. The very beginning was that of small groups hiding away in laboratories here and there throughout the country — in New York, Chicago, Philadelphia, St. Louis, and Boston. There were really only a few individuals working in the field. This sort of thing happened in my laboratory in Boston. For several years we would foregather in my laboratory and discuss mutual studies and interests in the cardiovascular field. There were people like Drs. Soma Weiss, Blumgart, Sam Levine, and Howard Sprague, and others; I think there were eight or ten of us.

Gradually we attracted more people into this particular field. We outgrew the laboratory and then used to meet in the hospitals in Boston, taking turns; I think that in large part through the cardiovascular group we developed — and I suppose that was true in other cities, too — a very good camaraderie between the hospitals in Boston. It's been a very pleasant atmosphere. Finally we found that the hospital meetings were getting too big; then we, a few active researchers, met periodically in our private homes. Thus for a long time, for years and years, we'd meet at each other's homes once a month — a small active group. This was all before the further development — the evolution — of such larger groups as the American Heart Association and the International Society of Cardiology, but that was the beginning. This was true, I think, the world over. In many parts of the world even today it's considered not seemly to specialize in such a "small" field as heart disease. Of course now I wish I'd been able to tell Richard Cabot— Richard Cabot himself warned me against going into such a small field — that someday we'd have specialists on one cusp of a single heart valve. There hasn't been as yet a W-P-W Syndrome Society, but there have been almost all other kinds, and I think they're essential. But we

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ought to keep together, too, as well as to specialize.

The last phase, which I didn't take up last night and which I'd like to mention now, is that of the International Society of Cardiology Foundation. We've had, as you all know, support for research and training and education in the field from the American Heart Association now for fourteen or fifteen years through its annual drives which are absolutely essential because the United Funds can't cover these enormous problems of research at the present time. Even though we'd like to put everything under one heading, it just can't be done yet; so we ask the public to be patient for at least another few years until we've got more of the answers. We have tried combining funds for our research under Community Fund Drives but we have found that it didn't work. Eventually when everything is settled then we can do so.

The American Heart Association and the Institute of Cardiology of the Public Health Service have nationally been of the greatest value in our national research and now are branching out a little into international research, but we don't have yet the fullness of support of international cardiovascular research that we need. And so a few of us, particularly Dr. Louis Katz of Chicago and myself, set up the International Society of Cardiology Foundation a few years ago in order to obtain funds for the use of international research, training, and other relationships of one kind or another in the cardiovascular field. That's partly because the International Society of Cardiology was incorporated in Geneva and is a foreign corporation and, therefore, funds given in this country couldn't be given tax-free until the Foundation was set up.

We have now this International Society of Cardiology Foundation in Chicago for this purpose, but it's just beginning. Since he and I are practically running this organization alone, I feel much as I did when I was helping to start the American Heart Association — I was the first treasurer and had a budget of $2,500 the first year; and when it got to be $10,000 the next year that was too much for me; and we got a professional treasurer. Now, as you know, it's gone up into the millions. It's possible that the International Society of Cardiology Foundation may sometime grow to that degree. In fact, we're planning next October to get a dozen or more international cardiologists and an equal number of laymen to meet together to plan the future, because this is going to be again a partnership of laymen with physicians the world over to help support some of these researches, like the international team investigations in the field or in the laboratories all over the world; this is the ultimate goal I think in world-wide cardiology. Then we may have to go on to the stars. And this will include — this plan of International team research — the communist countries. We've already got Jugoslavs on some of the teams, and there's every prospect that we'll have some of the cardiologists from the iron curtain countries eventually working with us. As I said last night, very encouragingly, the next European Congress of Cardiology in three years will be held in Prague in Czechoslovakia under the presidency of one of our good friends, a very capable cardiologist, Pavel Lukl of Olomouc.

Well, to get on to the subject, this very particular subject of today which is so important, although I think less important fundamentally, than what I have just said. Now as to the candidate for heart disease, or better, cardiovascular disease. I'd like to read you a letter that I received late in November from a man in Chicago who sent me a clipping from a London paper. I had been in London a few weeks before speaking to executives on the possible candidacy of the British executive as a victim of coronary disease. He wrote: "The enclosed article intrigues me because I am a carbon copy of the person that you have pictured as a likely candidate for coronary thrombosis. I am forty-three years old, working hard to get to the top. I am an ex-athlete, 5'10½" tall, 220 pounds in weight, stocky, muscular, large-boned, and almost bald. My personality is vigorous, ambitious and aggressive, and I tend to do everything — work and play — in excess. During the summer months I play golf two or three times a week, often 36 holes on Sunday, 18 walking in the morning (well I don't think that's going to hurt him), and 18 in the afternoon with my wife, usually with a cart (he'd better give up the cart). I have never had any ill effects even when I weighed 252 pounds. I have a physical examination once every year and at the present time am under the care of Dr. So-and-so who brought my weight down from 252 to 220 (that's a good thing), and am now and will continue to be on a fat-free diet. (He's perfectly well, mind you.)

Up until the time I started on the diet I had a low metabolism and was taking four grains of thyroid a day. The doctor, in the last four months through diet, has me off the thyroid, and the latest tests show that my metabolism is on the low-normal. The $64 question, of course, is what do I do other than what I am doing to prevent the coronary that you state I am so apt to have?" And he isn't far off in his description of his candidacy.

The medical journals, daily newspapers, and weekly and monthly magazines today are full of facts and fancies about the causes of heart disease, in particular about the factors or agents in the environment and in the ways of life which may be resopnsible. And laudable attempts are made on the basis of slowly growing evidence to give sensible advice to protect us from these serious diseases. There is, however, an unfortunate tendency to lump us all together in one program as equally prone to these ills and to give everyone much the same advice. What I propose to do today is to introduce into the picture a very important complicating factor, and one that is very little heeded but yet is of vital significance both in our research efforts and in their practical application. That factor concerns the individual or host himself, for he is the other half of the bilateral problem and is never the same as his neighbor or even his brother unless he happens to be an identical twin, and it's possible that there may be a little difference there too, though not much. We would like to make a study of identical twins — in their susceptibility to or candidacy for disease.

I'd like to present this problem of the candidate under two headings; namely, the genetic factor and the apparently greater proneness of these hereditary candidates to indulge in the excesses of what seem to be the more important environmental factors. That's a clue which we sometimes don't recognize, I mean the excess of everything just as this man wrote from Chicago. Ever since the days of Hippocrates — and I dare say in Egyptian medical literature, too, if enough of it had been saved for us to see — the involvement of heredity in the initiation of disease has been known and quite well recognized by the family physician. But like so many other facts more familiar to the practicing physician than to the professor of medicine, relatively little has been said about it at medical meetings or in the medical literature, and little more has ever been consciously done concerning it. For this reason, ten years ago, several of us began a study of possible clues as to coronary heart disease then and now the leading cardiovascular problem both in frequency and in seriousness. In this group are Dr. Levine, Dr. Sprague, Dr. Bland and others. We examined carefully 100 young victims of the disease who were under the age of forty years. I shall recount later our more important findings, adding observations from other studies and experiences. First, however, I'd like to take up, in the order of their age incidence, the more important types of cardiovascular disease.

Congenital Heart Disease: All of you have heard a good deal about congenital heart disease at this meeting. I would speak briefly about it. At the outset we must carefully distinguish between those deformities of the heart and blood vessels present at birth which are the result of inherited faults of the genes, and those deformities that are due to abnormalities acquired during fetal life, although even in the latter there is doubtless a familial proneness to the sensitivity of the fetus to certain factors which involve the mother during pregnancy. For instance, it is now well known — one of the few facts that we do know — that German measles during the first three months of pregnancy is very likely to lead to cardiovascular deformities and also to other defects in the fetus involving brain, eyes, and other tissues and organs. In this large field of cardiovascular defects acquired in the fetus during pregnancy very little has yet been accomplished. Animal experiments have shown that there are a good many agents that can cause deformities, including cardiovascular defects, and doubtless there will be discovered in man, too, agents that will be found to account for some specific abnormalities. A more concentrated study of this problem is much needed. Congenital heart disease is very much more common than we used to think. In our statistics it increased from 1½% of the total amount of cardiovascular disease that we were seeing in 1925 (3,000 cases were analyzed) up to 8% recently. Well, this is a statistical error, I'm sure. We weren't familiar with several types of congenital heart disease, and the families didn't bring their children for us to see because there was nothing we could do for them at the earlier date. Undoubtedly there were many cases

of the tetralogy of Fallot way off in the countryside and in the villages that never got to the medical centers and so weren't counted. I doubt very much if there is any more congenital heart disease now than there used to be except that there are more people in the world. We find congenital cardiovascular anomalies everywhere. I have seen congenital defects in Africa and Asia and in other parts of the world where I've visited. Oh, I neglected to say just now that there are some conditions, like patent ductus arteriosus, that occur in families — that is, more than one case in a family. A few other specific congenital cardiovascular lesions have been noted which also seem to have a genetic background.

Rheumatic Heart Disease: In the 1920's Dr. James Faulkner and I studied the families of several score of children with rheumatic heart disease to find out in how many families there were other cases of such involvement. We discovered that something over 50% of the families showed such individuals. This has been the general finding the world over. The more extensive the studies, the higher the percentage becomes.

Here I might mention an interesting recent experience. Twenty-five years ago Doctors Wise and Comeau and I took electrocardiograms of 50 pairs of twins, 32 identical and 18 nonidentical. There was a very close, but not complete, resemblance of the electrocardiograms in the case of identical twins, much less in the others. A few weeks ago one of these twins wrote me from Los Angeles, identifying herself and saying that she now had serious heart disease, and asked if I could examine her on this particular expedition that has brought me here. I did go through Los Angeles but in a great rush. We were 25½ hours late by the time we got into Los Angeles, and we just barely made a date in La Jolla with Dr. Dimond; therefore, I didn't have a chance to examine her. But I'm getting one of my cardiovascular friends there to examine her and see what she has. Evidently the contact already indicates that she has serious rheumatic valvular disease with some heart failure. I inquired about her twin sister, still living in East Boston, and — three weeks ago it would be now — I examined her in my teaching clinic. Although she seemed quite well, she, too, had rheumatic heart disease, perfectly typical mitral stenosis of moderate degree without symptoms. She is forty-three years old. It is quite likely that she should have an operation for mitral stenosis in the course of the next few years. She may not be far from symptoms. Further evidence from their family history showed that there was a brother who had died of rheumatic heart disease; other members of the family were free of it. Evidently there was a family susceptibility to the disease which happened especially to hit both identical twins. Like their electrocardiograms, however, they are not absolutely alike — one twin being much sicker. This difference may well have been due to the strain of six pregnancies in the case of the lady in California in contrast to only two pregnancies in the patient that I examined the other day who lives in East Boston. Well, this is an interesting environmental factor, you might say, which may explain why one of these twins is so much sicker than the other.

At this point, I might add a word, namely that because of the interest excited by this experience, and by another I shall recount a little later, we have decided to look up our series of identical twins of 25 years or more ago in order to determine how much cardiovascular and other diseases may have attacked them since our original study when they were all healthy. We hope to report on this follow-up study at a future date.

Of course, it's true that without the hemolytic streptococcus susceptible families would not have rheumatic heart disease. Both the degree of susceptibility and the amount of hemolytic streptococcus infection must weigh heavily in the actual occurrence of that disease. That is, even a less susceptible person, as from family inheritance, may be affected if there is a heavy enough concentration of especially potent bacteria. But it's quite possible that a very susceptible family may escape if the streptococcus exposure is very slight and rare. However, the point about the recognition of rheumatic heart disease is that we should as soon as possible identify the candidate in order to apply protective measures especially to him. It would seem a waste of time, energy, and money to try to protect 100% of individuals from rheumatic heart disease if only 5% are likely to get it. This figure of 5 is the approximate percentage of individuals all over the world who are candidates for this disease. It was shown during the

Second World War that out of a thousand enlisted men at an Army base or on shipboard attacked by a streptococcus sore throat, approximately 50 — that is, 5% — would come down with rheumatic fever ten days to two weeks later. It goes without saying, however, that acute streptococcus infection demands specific therapy whether or not the victim is a candidate for rheumatic fever. The mechanism by which this inheritance of susceptibility is transmitted through the genes is yet to be discovered. But the point is this, that those who are not likely to have rheumatic fever after a streptococcus infection should not be kept constantly on an antibiotic program. Only the 5% — if we can pick them out, or at least some of them — should be the ones to protect, not the other 95%. What I've said about rheumatic heart disease and the variable sensitivity of individuals to the hemolytic streptococcus applies to many other infections and infestations, such as, diphtheria which can seriously damage the myocardium, tuberculosis as it may involve the pericardium, syphilis in its involvement of the aorta, trichiniasis, and so on. However, some of these infectious agents are so powerful and malignant that often almost total populations are involved. Generally some are spared, apparently due to a natural resistance which may in part be hereditary, although it is quite likely true also that such resistance has been acquired by earlier infection of a mild type.

Hypertension and Hypertensive Heart Disease: High blood pressure is very commonly a family matter. It's been noted in several families in grandfather, father, and son; but it is so common the world over that it is often difficult to appraise adequately the relative responsibilities of genetic and environmental factors. Although a neurogenic etiology is strongly supported by certain studies, for example, those being actively carried on now in the monkey and in clinical investigations in man in the USSR, the particular neurogenic mechanism remains obscure. It isn't a matter of simple nervousness because highly nervous and neurotic individuals may remain normotensive all their lives even though on occasion they may have some elevation of the blood pressure emotionally as a transient finding. Incidentally it is true that some of our neurocirculatory asthenia patients continue to have this disorder of neurocirculatory asthenia all their lives. We still see them. I'm following cases in their 70's whom I saw forty years ago in the 1920's. They still have neurocirculatory asthenia, but they have never developed hypertension or any other kind of heart or vascular disease.

If one knows that hypertensive disease runs in a family, it's important to protect the younger members of the family from the obvious factors that aggravate it and perhaps even induce it. So we should pay some attention to the children of our patients and try to carry out some public health activity — or rather private health activity — for them. What are the possible aggravating factors? Well, there are excessive emotional strain, tobacco, obesity, and a high sodium intake in the diet. Very few doctors, I think, consciously try to protect the children of parents who are hypertensive when they get to be young adults and before they show any abnormality. We've hardly gotten around to this yet, but it is, nevertheless, our clear duty.

Atherosclerosis: Here we come to the most serious cardiovascular problem of all today because it's not only the most common circulatory disease in this country and many others — involving in particular the prosperous fractions of most populations — but it's also a dangerous disease, except in its minor manifestations, and is responsible for the vast majority of instantaneous deaths. In that we agree with our Soviet Russian colleagues. That we shall discuss when we meet them in May in Moscow. We will try to agree on definitions and pool our actual experiences. I've asked Milton Helpern in New York to help us get this information which includes the distinction in autopsy findings between three groups, namely those who die instantaneously, that is within seconds; those who die within minutes; and those who take hours to die. They're often all called "sudden deaths." Well, most instantaneous deaths are apparently cardiovascular — that is, cardiac, of coronary origin; a good many of the cerebral deaths are slower, and this is true of vascular lesions in other parts of the body, too, which may take hours. And then there's the abdominal aortic aneurysm that may rupture.

Atherosclerosis alone is responsible, as I said yesterday, for over 25% of all the deaths in the United States. It's a disease primarily of the arteries and only secondarily of the organs supplied by these arteries, that is the heart, the

brain, the kidneys, and other viscera. I need not recount the many reports that have been published in recent years, like those of Caroline Thomas of Johns Hopkins, indicating the high frequency of atherosclerosis in early or middle age in certain families. One need not, I think, be over-concerned about a heart attack or a stroke causing death in a father or mother at the age of 80 or 90. We may someday, however — in the next generation — think that that's too young an age to die. In fact, one must die of something, and probably a rapid death from a heart attack at a very advanced age might be considered almost normal. But when atherosclerosis is so severe that it produces heart attacks or strokes or leg impairment in youth, middle age, or even in the 60's, one must acknowledge that this should not be considered merely an aging process. We must call this a real disease and one that we must eventually prevent at such early ages. Just how much relative responsibility heredity and environmental factors must share, no one yet knows. It very likely varies from case to case. My own belief is that in most individuals heredity is often at least half the problem. And because we are likely to be able to protect the candidates better in the future than we have in the past, it behooves us to try in every way to identify the candidates while they are still young and can be saved. This is the chief importance of much of our world-wide epidemiological cardiovascular research today.

At present, we can't do much about changing the effects of our heredity, although eventually we may do so by some biochemical or other alteration of the enzymes of our genes. That time is still probably far in the future, although it may well come. Meanwhile we certainly can deal with the environmental factors in many instances, and this may be enough to retard serious atherosclerosis by several decades. Despite what I have said concerning the candidate for atherosclerosis, however, it's true that almost entire populations seem to be riddled with it while others of the same age level seem to be quite free. Take, for example, the average American coronary artery — and I showed yesterday the comparison of our coronary arteries in Boston after the age of twenty years with those in Fukuoka in Southern Japan and the great difference between the two. I spoke of the great frequency of myocardial infarcts in Boston as compared to those in Fukuoka, and also of the fact that in darkest Africa the Bantu has both clinically and pathologically very little atherosclerosis of any importance until really old age.

And now let me go back to our 100 young victims of coronary heart disease for possible clues. First the most striking clue is that of sex. That's well known, but the degree of it isn't always recognized. Ninety-seven of over 100 cases under the age of 40 years were male, only three were female and their ages were close to forty in contrast to the ages of many of the males who were in their early thirties and even in their twenties. There had been a previous 100 cases reported ten years before — in the early 1940's, I think — by Dr. Levine, Dr. Glendy, and myself. We checked those 100; 96 were males and four were females. So out of 200 cases of coronary thrombosis and myocardial infarction under the age of forty, 193 were males and only seven were females. Thus at the very outset it's the males, young and middle aged, who are more likely to be candidates for coronary heart disease than the females, who are protected until the menopause. Further evidence of this has come from observations on ovariectomized young females who then become prone to early heart disease, and on castrated males in a colony in Kansas where there has been for many decades a state law pertaining to morons and feeble minded. In that colony there has been very little evidence of any important degree of atherosclerosis, even in the older inhabitants.

Having decided that we must identify the candidates for early trouble among the males, we must consider the family history, that is, the status of health and disease of the family through as many generations as possible. This is not adequately done even by many of the most conscientious family doctors. Of course, sometimes one cannot find out the facts because of lack of knowledge by the family itself of past events, but sometimes it is possible to get more information than we do now about grandparents and uncles and aunts. We found in our study that there was much more likelihood of a story of coronary heart disease in the parents and siblings of our patients than in the families of the controls, and our controls weren't too good, as I said yesterday. I might add that one of the difficulties about our controls is that they themselves are now showing, a few years

later, coronary heart disease. They, too, at the time that we made the study, undoubtedly had already a fairly high degree of atherosclerosis even though it had not then come to light. In other words, in America there are very few adequate controls left because we all tend to live the same ways of life.

It would be helpful for each family to keep a record, as was once done in the family Bible, though of course more complete, as to illnesses, longevity, and causes of death of all members of all families. A few people have been trying to get out booklets that can be used by the families for this purpose, but you don't need anything so elaborate. Such a custom would be very helpful for future generations. One other word should be said, and that is about post-mortem examinations. Such examination should be recognized as invaluable for the family record. Families should know this. We doctors are not the ones who are going to get all the value from such an examination; the family itself will, or should, obtain information that may very well protect the descendants or the rest of the family who are still alive.

Another clue that helps to identify the candidate, which is largely hereditary in origin, includes bodily structure, with large bones and muscles. The three common types of body builds which are often mixed but now and then clearly differentiated, include 1) the mesomorph, that is, the broad, muscular type, with short neck, wide hands, and short fingers, and usually athletic in inclination and accomplishment; then there's 2) the ectomorph, the lean person with relatively small bones and not over-muscled; and 3) the endomorph, the rotund individual who's often prone to be fat. And there are many borderline cases, of course, between these three groups. It's been very helpful in my experience to have this classification. Among our 100 cases of coronary heart disease under the age of 40, there was not a single true ectomorph like myself, so that if I'd made this study before I was 40 I might have known that I wouldn't be a candidate. Although there were some borderline cases, as I said, the majority were preponderately or purely mesomorphs. That's as to the young patients. As they get older, or if they have some inherited defect or tendency to diabetes, they don't need to be mesomorphic. There seemed no doubt that this is an important consideration or clue — that is, the build is important in the young candidate.

The athletic heart, so-called, is largely a misnomer. It's quite likely that the athlete has a somewhat larger heart if he indulges many years in various strenuous sports, but it doesn't get very large, and it's not diseased. This was true of Clarence de Mar, the marathon runner who died a year or so ago of cancer at the age of 70. He'd run hundreds of marathons, had won a good many, and was still running in his 60's. He ran to the hospital to be studied when we examined him at the age of 65 — he claimed that he never walked. His heart was in excellent condition. It was a little heavy, perhaps — 360 grams instead of a so-called "top normal" of 340 — but it wasn't much increased in size. It looked strong, the muscle was good and the coronary arteries were wide open. However, it is the athlete of the type mentioned that tends to be a candidate for early atherosclerosis if he is careless. Thus, the "athletic heart" does exist, in a way; but it's more the atherosclerotic heart in an athlete than an athletic heart per se.

One of the studies that has not been made, but must be done someday, is that of the possibility of a family coronary-arterial tree. It's quite likely that certain coronary-arterial configurations run in families. There may be a tendency for either the left coronary artery or the right to be preponderant. It's conceivable that there may be an inadequate blood supply to the muscle of the left ventricle. In the case of some families there is a high preponderance of the right arterial tree which may not supply the left ventricle as adequately as needed. Also it's conceivable that the collateral circulation may be more easily developed in some families than in others, and it is the development of the collateral circulation through the years that has undoubtedly saved many of us who would otherwise be in trouble because of narrowing of our main coronary arteries through a slow but steady progression of atherosclerosis.

Thrombosis which is a complication, may come even if your coronary arteries aren't very narrow. That's a subject apart that needs further study. There are certain individuals and certain families who are thrombophilic. We also know that certain important clues come from biochemical studies. There are three tests that are more interesting and useful than the others. These are the following: first, a high blood sugar, indicative of a diabetic tendency, or dia-

betes itself in the family; second, a high serum cholesterol content of 300 mg. per cent or more (we in America put the upper figure at 260, but for the rest of the world that's too high); and third, a high blood uric acid content (we found a higher uric acid blood content in our young coronary cases). All are clues to the development of early and more serious atherosclerosis.

Finally, amongst the other clues, there's that of personality as described in the letter I read you. It's true, although just how it works we don't know, that a more energetic, aggressive personality is found in more of the young coronary cases than in the controls. It doesn't seem to be so important a clue at older ages. I would not rate it as a highly important clue. I've seen coronary thrombosis in very placid individuals, too.

Leaving these more traditional clues for the moment, let me add an observation that many of us have made, namely that these candidates as pictured above, at least many of the younger ones, seem to present an additional trait associated in some way with their personality makeup. That is a proneness to subject themselves immoderately — one might well say intemperately — to environmental agents that we think may be precipitating factors in the disease — not necessarily causative factors, although some of them may be — such as diets over-rich in fats, especially of the saturated animal variety; lack of physical exercise or labor, which I think may well play a role, the heavy use of tobacco, which is now being investigated, and the extensive degree of emotional stress about which I spoke this morning at the psychiatric institute here in Phoenix. Such combination, therefore, of a candidacy for atherosclerosis, and second, an overexposure to what seem to the candidate to be enjoyable environmental factors, may very well be the crux of the problem. As an example, of this let me site a recent case of a man, twenty-seven years old, with acute coronary thrombosis. A positive family history, an athletic youth, a gain of 30 pounds in a few years coupled with retirement from all exercise, a habit of smoking three packages of cigarettes a day, and a highly nervous temperament were the features of this case. He happened to be an identical twin. And when he was presented at our medical grand rounds the other day at the Massachusetts General Hospital, his twin brother sat beside him. They were exactly alike in every respect except for the acute illness in one twin. The well twin had gained exactly 30 pounds also. He, too, smoked three packs of cigarettes a day. He was exactly like his brother in every respect, but he was not yet obviously ill. I'm sure, however, that he has a high degree of coronary atherosclerosis, although he has not yet had an actual thrombosis. Therefore, some other environmental factor or perhaps even a little different internal make-up must have been responsible for the clinical difference in these two brothers. I would guess, however, that there is probably only a minute degree of difference between them. One brother has happened to have thrombosis already, and the other is likely to get it unless he starts protective measures at once. It is quite obvious that in both their cases several things should be done that are very likely to be effective. One may say that we haven't all the proof yet, but it's surely quite clear to any sensible person with years of practical medical experience that the obvious therapeutic protective measures to be taken include, first, a change in the diet and a loss as rapidly and as reasonably as possible of the 30 pounds that have been wrongly added. Most of their fat intake had been in saturated fat. That probably ought to be done first. Next, there should be a sharp or actual omission of the tobacco. Then they should resume exercise, probably vigorous exercise. Such exercise may be indulged in later even by the twin who is sick now because he is having a very rapid convalescence with only a small myocardial scar. They should also alter not only the factors just mentioned but also cut down some of the rush and hurry in their recent ways of life. At this point — I should have added this a little earlier — one might quote briefly from George Herbert who said in 1651: "Whatsoever was the father of a disease, an ill diet was the mother." Granting that a bad heredity may well play the role of father, an overrich diet or physical indolence may well be the most likely one or two of several environmental agents to be the mother.

One other case I would cite, and that is of another athlete, a young man of 26, whom I was asked to see in a Montreal Hospital some years ago. He was in good general physical condition so far as musculature and weight were concerned, but he had a family history of much cardiovascular trouble. He had added to this

the extraordinary habit, probably on a psychotic basis, of drinking 12 quarts of milk daily for years. It's certainly quite possible that the amount of animal fat in 12 quarts of milk may well have played an important role in the initiation of his coronary thrombosis. This was the only psychotic condition that I could find in him, but it did seem quite abnormal. The reduction to one quart of skimmed milk a day from 12 quarts of whole milk would be reasonable for that particular person. And I know that the American soldiers when they came back from the Second World War didn't go to bars for whiskey, they went to dairies for milk. Our soldiers, the best fed soldiers in the world, who had so much atherosclerosis in Korea, were heavy milk drinkers. That habit may have helped to increase their stature so that the average son of today is about 2 inches taller than his father, but this may not be a wise change. The larger and more rapidly growing animals don't live so long as the others, which is generally true throughout the animal kingdom.

Finally, as I leave this fascinating subject of atherosclerosis, let me call attention to the recently published experiences in a group of patients with peptic ulcer treated by the rich Sippy diet of years ago compared to controls treated otherwise. There are more than twice as many cases of coronary thrombosis in the follow-up study of those treated with the rich diet as in those not so treated. A few days ago I saw a young man with coronary thrombosis who had been treated with a rich diet first for tuberculosis 15 years earlier, at which time he gained 50 pounds, then later again with a rich diet for a peptic ulcer. I dare say that many individuals who are not candidates could stand this, but he, without a doubt, has proven from his actual illness that he was a candidate. My father, who was very thin when he was twenty-two or twenty-three years old, so he told me, was uninsurable. He was taller than I am but he weighed then only about 125 pounds. They wouldn't insure him because he was a candidate for tuberculosis, which was common in the 1880's. And so the insurance companies advised him to put on weight, which he did during the next 40 years. He developed a lot of atherosclerosis even though he lived into his 70's. This wasn't the best advice, at least unqualified, although perhaps it did protect him from tuberculosis. Of course, that infection was the chief health hazard at the moment, but he didn't get the advice that we'd give today. After he had put on say 20 pounds, that would have been enough. Incidentally, he drank much milk all his life.

A final condition, which has been of great interest to me because of its simulation of heart disease, is that of neurocirculatory asthenia. I talked about that this morning in the psychiatric clinic. And all I have to tell now is about a patient that I examined during the Second World War, a young man who had been discharged from military service because of unfitness due to a high degree of NCA. He had no heart disease. It happened that his father had been similarly discharged with this same complaint during the First World War. That undoubtedly was a family trait.

In conclusion, I hope that I have made it clear that much more research and much more attention must be paid to the host affected by disease than has been done in the past. We've concentrated almost all our attention on the disease process itself and on the environmental agents immediately responsible for it. We must, for every type of heart disease — in fact for practically all diseases — make every effort to identify the candidates for disease and the degrees of their candidacy in order to apply to them first and early in life the protective measures relating to environmental factors when we have determined what they should be. Fortunately we are far enough along the road already so that we do have some ideas of who the candidates for cardiovascular disease may be, and we also have some ideas, although not completely analysed, about the relative importance of harmful environmental factors. I'm sure that a decade from now we shall have made much progress in both directions if we maintain the steady increase in our research potential, which has been the history of the last decade, both in the form of support by private groups like the American Heart Association with its annual drives, and that of support by Government funds under the Public Health Service. We should accomplish as much in the control of these diseases, which I'm sure are preventable in youth and middle age, during these next two or three decades as we have with so many other diseases, especially of the infectious type, in the past. But there is much work to do to meet this challenge.

Original Articles

Cryptococcus Meningitis

Report of a Case Treated With Amphotericine-B (With a Ventriculo-Jugular Shunt, With a Halter Valve)

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A timely review of the subject of Cryptococcosis with a report of a patient with proved meningeal involvement, heretofore generally fatal, who had a clinically satisfactory response to therapy with Amphoterecine-B; methods of administration and toxic effects are fully described. In addition, an unusual complication of obstruction of the third ventricle and its successful surgical amelioration with a ventriculo-jugular shunt adds to the interest of this report. A fairly complete bibliography is of added value.

Cryptococcus meningitis has been viewed until recently as uniformly fatal disease for which no specific therapy was known. Cryptococcal meningitis and meningo-encephalitis are the late clinical complications of a primary pulmonary cryptococcosis, a disease that is usually benign and self-limited. In a few individuals with low host-resistance, cases of leukemia, Hodgkin's disease or other lymphomatous diseases, Cryptococcus neoformans may disseminate from this limited focus in the lungs or skin lesions to other organs. For some unknown reason, the Cryptococcus neoformans has shown an unusual affinity for the central nervous system(1).

According to Freeman it presents itself here in three types of involvement: (1) meningeal type, which is the most common where it is characterized with diffuse granulomatous meningitis; (2) perivascular form, accompanied by a single granuloma or eyst in the cortex; and (3) an embolic type with deeply placed lesions in the cortex(2).

Infection of the lungs has been observed in 2 per cent of the cases. The skin usually shows disseminated infection (acne-form lesions are the most common). Isolated lesions have occasionally been observed in muscles, soft tissues of the pelvis, tongue and nasopharynx. Some cases may generalize the infection to other organs, but the kidneys are rarely affected — and the organism is cultured then from the urine. Suprarenal lesions are suspected in cases that have shown adrenal insufficiency, as described by Rawson.(3) Bone lesions are rare. One case was reported in the knee, by Kessel.(4)

Cryptococcus Meningitis can be a very chronic disease subject to remissions, and because of this fact it is impossible to be certain of a cure. One case reported by Beeson, of Cryptococcus Meningitis of 17 years' duration is found in the literature.(5)

The organism Cryptococcus neoformans, also known as Torula histolytica, is a yeast-like organism which has been found in the "juice" and surface of plants, in the body of a great many insects, wasp nests, excreta of birds, especially pigeons, and has also been found on human skin, in the throat and gastrointestinal tract, and has been recovered from skin infections in the horse and some other animals. No incidents have been recorded of infection in laboratory workers, from infected cultures nor of infections

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from animal to animal — or man to man.(6)

The portal of entry has not been established, although the consensus of opinion seems to favor the respiratory tract. Takos in 1956 succeeded in infecting marmosets by the oral route.(7) It is also apparent that the Cryptococcus grows slowly in man, indicating that man is probably not so suitable a host for this parasite, which has the properties of a secondary rather than primary pathogen.

Cryptococcus neoformans is a budding fungus similar to Blastomyces, but differs from the Blastomyces in its failure to produce mycelia on artificial culture media. It appears in the spinal fluid or other infected tissues as a spherical, thick-walled, yeast-like structure from 5 to 20 micra in diameter. Each yeast cell is surrounded by a well defined, clear refractile capsule, and budding forms may be found. The organism grows readily on the common culture media, including blood agar, glucose agar, and Sabouraud's medium.(8)

TREATMENT

Until the discovery of Amphotericine-B, no treatment was available. One recovery was reported in 1942 by Marshall and Teed, following bilateral mastoidectomy and Sulfonamides.(9)

In 1955 Gold and his co-workers succeeded in isolating a polyene antifungal antibiotic from a species of South American Streptomycete. (10)

This extract called Amphotericine-B has been proven to be effective in vitro and in vivo as a fungicidal and fungistatic agent, in concentrations of .2 to .3 micrograms per ml.(11)

Its effectiveness in the treatment of central nervous system infection is limited by its failure to cross the blood-brain barrier in significant concentrations and treatment must, therefore, be prolonged.(11)

Amphotericine-B is a fairly toxic drug with particular predilection for the kidney, causing almost constantly an elevation of the BUN. This, however, is directly proportional to the frequency and concentration of the drug and can be effectively controlled by diminishing the dose and administering the same every other day. However, as more prolonged follow-ups of cases treated with Amphotericine-B occur, evidence sems to be appearing of possible permanent kidney damage. Meiss reports four cases of calcinosis proved by needle biopsy of the kidneys, and one case which still shows a BUN elevation of 100 mg. and the presence of erythrocytes and casts in the urine 18 months after the cessation of treatment.(12)

Another abnormality encountered during the treatment with this drug is an elevation of the BSP liver test with retention of the dye. Again this seems to be transitory and reverts to normal if the drug is discontinued or administration spaced. No adverse effects on the bone marrow, heart or central nervous system has occurred.

Other side effects encountered during treatment with this drug consists of nausea, chills, fever, vomiting, flushing, fatigue, generalized aches and pains and occasionally convulsive seizure. It has been noted that these reactions seem to be related to some extent to the particular lot used and may be caused by some impurities. Some lots cause very little general reactions. The side effects may be controlled by the simultaneous administration of steroids and particularly, the headache responds very effectively to Ergotamine.

ADMINISTRATION

The drug is administered intravenously in 5 per cent glucose doses of 25 to 50 mg. per liter and is given slowly over a period of 6-8 hours. If the smaller doses 25 to 30 mg. are used these can be given in 500 cc's of glucose. Occasionally local thrombophlebitis may occur.

In very serious cases .5 mg. in 10 cc. of distilled water may be given intrathecally. This route should be used with care since arachnoiditis, hyperpyrexia, flaccid hemiplegia and convulsions may result from over-dosage.(11)

Other adjuncts to the treatment of Cryptococcus Meningitis recommended by Littman is the avoidance of Thiamine or B-Complex injections because of the need of the organism for Thiamine for capsule synthesis and which the organism cannot synthesize on its own.(1)

Because of the frequency of low gamma globulin levels found almost consistently in the spinal fluid by Littman, the administration of gamma globulin twice a week in doses of .45 cc. per kilogram is recommended.(11)

The following case is being presented because of its long remission following treatment with Amphotericine-B and because the successful surgical treatment of one of the complications of this treatment, namely plastic arachnoiditis with cerebral spinal block.

The patient is a 37-year-old married lawyer

from Ciudad Obregon, who was born in Hermosillo, Sonora, Mexico, and who has apparently lived in that section of the country all of his life. The *family history* is not significant. His *personal history* is not remarkable.

The *past medical history* revealed the usual childhood diseases— jaundice at the age of ten, probable malaria at the age of six, and primary syphillis with genital lesions in 1941, for which he was treated with arsenicals and heavy metals.

The patient was admitted to St. Mary's Hospital on August 18, 1958, with a chief complaint of progressive severe headache, loss of vision in the right eye, fever, and pain in the back, with involvement of the sensorium.

History of his *present illness* reveals that the last week of June, 1958 the patient was in Mexico City where he committed some excesses in food and alcoholic intake, which caused some vomiting and prostration of transitory nature. On the 7th of July, following a party, he developed general malaise, fatigue and irritability. On the 17th of July he developed headache, loss of appetite, constipation, moderate and irregular fever for which he was hospitalized and subjected to several investigations. Diagnosis at that time was "late active syphillis of the nervous system" and he was treated with Penicillin without any improvement. On August 8th he continued with the headache, general malaise, fever, anorexia and constipation — and profuse irregular perspiration. There was blurring of the vision of both eyes. Overnight, from the 9th to the 10th of August, he lost the vision of the right eye. Examination of the eyes at that time revealed a slight blurring of the internal superior quarter of the right optic disc, and a diagnosis of nonspecific optic neuritis was made. At that time his fever was 38.2° C.; pulse 58/minute; blood pressure 110/70. He was complaining of lack of appetite, nausea, mental disorientation, intense headache and severe constipation.

A diagnosis of possible paratyphoid fever was made. He was started on Chloromycetin, of which he took 17 grams in 4 days, with disappearance of the fever. His general condition seemed to improve, although the headache and blindness persisted.

On August 15th he had a sudden exacerbation with very severe headache, severe backache, pain in the back of the neck, thighs and arms. There was profuse perspiration and pallor and he again developed vomiting. The mental turpitude was accentuated, although he did not lose consciousness. The vomiting became more frequent, the headache more severe, the fever was irregular and the general malaise and fatigue more accentuated. It was at this time that he was admitted to St. Mary's Hospital by Dr. Juan Fonseca, to whom the patient had been referred because of the neurological symptoms.

Physical examination: Patient is a 37-year-old male, who appears severely acutely ill with moderate impairment of the sensorium, complaining of severe headache. There was no dyspnea, cyanosis or jaundice. Head revealed no significant abnormalities of the scalp or skull. *Eyes:* There was no vision in the right eye although both pupils reacted to light and consensually. The left eye reacted normally to accommodation. Examination of the fundi revealed right retrobulbar neuritis with blurring of the disc. *Ears-nose and throat* were not remarkable. The *neck* showed marked rigidity with accentuation of pain on flexion. There was no lymphadenopathy; no venous congestion. No thyroid enlargement. The *lungs* were resonant and breath sounds were normal; no rales were heard. The *heart* was not enlarged; there was normal sinus rhythm; the rate over 60/minute. The sounds were normal and no murmurs were heard. *Abdomen:* There were no masses, rigidity or tenderness; no organs were felt. *Genitalia* showed no abnormalities. The *rectum* showed no strictures or masses. *Skin:* There were no pigmentations or eruptions. *Reflexes* showed no significant alterations; the Babinski's were negative.

Admission urinalysis and blood count were not significant. The sedimentation rate was 47 mm. Examination of the cerebral spinal fluid revealed a pressure of 250 millimeters; 108 lymphocytes; 45 milligrams of glucose; 138 milligrams of protein. The colloidal gold was 5543220000. The Wasserman was doubtful. A microscopic examination without staining revealed abundant sperical organisms, with refractile capsules, which were identified as Cryptococcus neoformans, with India Ink staining. Cultures and Sabouraud's and blood agar, grew numerous colonies in 48 hours. Sensitivity tests revealed sensitivity to Amphotericine-B, Nystatin, Mandelamine, Mysteclin and resistance to Penicillin,

Streptomycin, Aureomycin, Tetracycline and Sulfas. The coccidioidin skin test was negative. Febrile agglutination tests were negative. Blood urea nitrogen was 18 milligrams; blood glucose was 104 milligrams. Serum precipitin tests done by Dr. Abrahams, of the Department of Microbiology and Immunology of Cornell University Medical College, were positive. The ventricular fluid gave only equivocal or negative results.

X-rays of the chest were negative. X-rays of the skull showed no abnormalities. The electroencephalogram revealed a generalized slow dysrhythmia, strongly favoring the left hemisphere leads, and at times almost focal in the left frontal and left temporal areas.

With the diagnosis of Cryptococcus Menigitis verified, treatment with Amphotericine-B was instituted, at first by an intravenous route. Because of the severity of the illness treatment was started with 75 mgs. in 1000 cc. of glucose, but this dose caused severe reactions with vomiting, chills, fever, profuse perspiration, strabismus and increased headache. The dose was then diminished gradually to 30 mgs. which was given every 72 hours with an injection time of 6 to 8 hours. The drug was combined with Solu-Cortef-20 mg. per dose in the solution, which diminished markedly the severity of the reactions.

The patient was also treated with Amphotericine-B by the intrathecal route in doses of ½ a mg., of which he received 7 doses.

During the course of treatment the patient showed some elevation of the blood urea nitrogen several times during administration of the drug, the highest value being 35 mgs. This always returned to normal upon discontinuance of the drug or within two days. The liver function was investigated by the bromosulphalein excretion test which revealed at one time a 44 per cent retention of the drug. This again returned to normal without discontinuance of the drug. At this itme he was receiving a daily intravenous treatment, which was then spaced to a treatment every other day. After having received 580 mgs. of Amphotericine-B intravenously and 3 mgs. intrathecally, the first sterile fluid was obtained on September 23rd, with 41 milligrams of glucose and 87 milligrams of protein. However, in spite of the negativity of the spinal fluid and apparent improvement in the amount of protein, the patient continued to have vomiting; he became incoherent, anorexic and the headache persisted. From the 27th to the 29th of September, the patient had periods of convulsions, trismus, nystagmus, pallor, profuse perspiration and deviation of the mouth towards the right, aphasia, agnosia, fixed stare after the nystagmus. The pupils did not react to light and on opthalmological examination of the left eye, it was found that there was slight papilledema.

On October 2nd, a ventriculogram was performed and the fluid obtained during the procedure showed 2 organisms per field, which gave a positive culture. The ventriculogram revealed that the lateral ventricles were dilated moderately and it was suspected that there was a partial obstruction in the aqueduct of Sylvius. With the persistence of the headache and the accentuation of the papilledema, the patient was then submitted to surgery on October 8th. A ventriculo-jugular shunt with a Halter Valve was performed by Drs. Juan Fonseca and Charles Elkins. Surgery was without complications and the patient continued to receive the intravenous Amphotericine-B every 72 hours. He improved notably within one week with practical disappearance of the headache. There were no more convulsions, the vomiting was stopped, and the papilledema did not progress. The spinal fluid pressures revealed normal pressures and the protein and the sugar became normal subsequently. The patient was discharged from the hospital on October 29th and continued to receive intravenous Fungizone at home until November 22nd. At this time the medication was discontinued because of nausea, vomiting, transient headache, urticaria and malaise during the administration of the drug. Between December, 1958 and March of 1959, the patient had had 12 spinal fluid examinations with no organisms found, but on March 2nd, the spinal fluid again revealed encapsulated organisms, suggestive of Cryptococcus, some of which were in the budding form. However, these organisms did not grow on culture media. The spinal pressures continued to be normal and there were no other symptoms, but the patient received another course of 350 mgs. of Amphotericine-B at the rate of 25 mg. every 72 hours.

The patient continued to do well and on November 2nd, he had another spinal fluid examination at which time the pressure was 220 mil-

limeters. It was clear and contained a few organisms, some of them in apparent division. However, the protein and sugars were normal and again the organisms failed to grow on culture media. However, on November 10th the patient again was started on Fungizone until further reports from the cultures were obtained. At this time the patient was back to work and leading a normal life. The patient has been seen periodically through 1960 and 1961 and, although spinal fluid examinations have always shown 1 to 2 encapsulated organisms, no growth has been obtained on cultures. The patient has been symptom free except for some minor intercurrent illnesses, but in spite of the failure of the organisms to grow on cultures, he has received short courses of Amphotericine-B from between 300 to 500 mg., which were finally discontnued at the patient's request because of the inability to obtain a lot that would be free of side reactions. He was last seen in August of 1961, at which time he was feeling well; was working as usual and had no complaints except for the persistence of the blindness in the right eye.

DISCUSSION

This case has demonstrated the effectiveness of Amphotericine-B to cause at least a long remission of meningitis caused by the Cryptococcus neoformans. It is true that meningitis due to this organism is subject to spontaneous remissions, however, it is our feeling that this patient was so extremely ill from the onset that this remission was caused by the Amphotericine-B and was not a spontaneous remission.

The toxicity of Amphotericine-B is also evident from study of this case. The general reactions exhibited by the patient and which have been previously discussed in the literature, certainly suggest that this drug should be used with caution; also, that the addition of intravenous steroids is of great help in the control of these systemic reactions which are apparently of an allergic or drug reaction type.

The toxic action upon the kidney as shown by the elevation of the blood urea nitrogen was also demonstrated, as has also been discussed by other authors in the recent literature. It is interesting that the patient at this time, although not receiving any further Amphotericine-B, is showing a very slight but persistent elevation of the blood urea nitrogen. The most interesting complication in this case was the development of the plastic arachnoiditis with cerebral spinal block, and the treatment of this complication by the ventriculo-jugular shunt, which proved to be successful. While plastic arachnoiditis can be caused by the use of intrathecal Amphotericine-B, as was used in this case, it is not possible to be certain whether this is the result of the Amphotericine-B, or whether this complication was the result of the meningitis process itself. Once the presence of the cerebrospinal block was established, the decision to establish a ventricular jugular shunt proved itself to be the correct one. To date, the Halter Valve seems to be functioning properly, and the patient has not had any indications of any recurrence of increased intracranial pressure.

SUMMARY

A case of Cryptococcus Meningitis has been presented, which was treated with Amphotericine-B, with resulting long remission of the disease. This case exhibited practically all of the reactions that have been mentioned in the literature, in reference to the treatment with Amphothericine-B, including the possible development of plastic arachnoiditis as a result of the intrathecal injections of this drug. This complication was treated surgically with a ventriculo-jugular shunt, and a Halter Valve, and probably represents the first case of this complication so treated.

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We wish to express our appreciation for the advice and suggestions given in this case by: M. L. Littman, M.D., Ph.D., of Mount Sinai Hospital, New York; John T. Groel, M.D., Squibb Institute; Dr. Abrahams and James M. Neill of Cornell Univ. Med. College; Aaron B. Lerner, M.D., of Yale Univ. School of Medicine.

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Medical Terms Origin and Use

Robert D. Smith, M.D.

This second paper presenting the author's excursions into etymology and his opinions about preferred words in medical writing continues to be provocative. One wonders what simple descriptive name he would propose to replace Circle of Willis.

INTRODUCTION

THE LANGUAGE of medicine is a verbal attempt to describe or illustrate human structure, functions and ailments.

Easier and more comprehensive reading can be achieved if word origin and construction is understood. The Greek-Roman vocabulary which we inherited provides a good, but, not an exclusive, basis for expansion and adaptation. It is necessary to recognize that, unlike mathematics, medical terms are not always exact or even rational. Often they are derived from folklore, emotional expressions and very primitive ideas. Eunuch, interpreted literally, is a bed keeper or bed holder. Pneuma, for example, was used by the Greeks in reference to the spirit or soul.

Attack, from the Latin "impetere," is in common use as "an attack of," flu or other ailment such as the French "la grippe." "Catch" is also used in reference to disease or a complaint, i.e. "catches me in the back."

Faulty word construction abounds; autopsy should be necropsy; Logos means to discuss or teach and is used to refer to sciences. Pathology literally means the science of suffering and etiology is the science of cause. Lithotomy should be lithectomy. Plege or "blow" gives a wide variety of uses such as plague, paraplegia. Extrovert should be extravert.

Many *prefixes* such as par, ortho, meta are in general and scientific use without regard for their exact meaning. Para means "near to," "along side" or "by" and can refer to, position as "para-thyroid"; modification as, "para typhoid"; sensation as "para-esthesia"; mental deviation is paranoia, while paragon indicates polish or excellence.

Wide variations occur in the use of *plural* words and are most often influenced by ease, sound and spelling: — stigmata sounds better than stigmas; corpora is easier than corpuses. Sinus is both singular and plural.

With "rh" — and "rrh" — always use the rh at the beginning of the word as in rheumatic, and the rrh, after prefixes as in hemorrhage.

"OE" represents the Greek "OI" as in oisophegos and is better just as esophagus. Fetus is much easier than foetus.

The final "al" when it follows "ic" should be reduced to the simpler forms; physiologic for physiological.

Drop the "U" when it follows the "O," as humor and color are far better than humour and colour.

The use of *eponyms* or personal names such as Hunter's canal, Paget's disease, Cogan's syndrome, Circle of Willis — should be vigorously discouraged in favor of descriptive, functional names. Multiple personal names used to designate various conditions is medical burlesque, compounded.

Primitive words survive and persist through long usage. They reflect what the ancients thought of body processes and disease. "Soma," referred to the body substance and is retained as somatic, chromosome. "Psyche," or human breath was mythologically regarded as the soul and persists as psychology, psychiatry. The word "pneuma" has now been confined to respiratory function, e.g. apnea, pneumonia, hyperpnea. Artery is from the Greek, "arteria"; aer, air;

tereo, to carry.

The "Humoral" theory dominated medical thinking for over 2000 years. The distribution or disturbance of one of four body fluids, a kind of internal secretion theory, determined health or disease. Excess of blood, "sanguis," caused elation or well being; "phlegm" or mucus was supposed to come from the brain and resulted in ill humor; "chole," yellow bile or melaina (melas, black) chole produced black or choleric temperament. This idea is carried over into common use as, "to vent one's spleen." Aqueous humor" of the eye; "rheumatism" or flowing of the humors, and "rheum" for head colds are frequently used examples of the old humoral theory.

Feelings and *emotions* were believed to arise in various parts of the body. "Hypo-chondria" (under the cartileges) and "phrenic" (phrenic nerve), from "phrene" or mind, refer to mental attitudes. "Hysteria," (hystera, womb) is the classic citation for women's troubles.

"Neuron" originally was used for both nerves and tendons as they were both believed to be hollow. Neuron is now used exclusively for a nervous connotation, however, the ancient usage in "aponeurosis" continues in daily use.

"Gonorrhea," (gone, seed; rheein, flow) perpetuates the old belief that the discharge was seminal fluid.

Next month: Sources of Medical Words.

SERENDIPITY IN DRUG RESEARCH

Everybody who talks about the products of the future should admit from the outset that he doesn't know what he's talking about. Because we literally don't know — and in some ways can't imagine — what will turn up . . . Drug research today doesn't proceed in a logical straightforward line from the discovery of the cause of a disease to the discovery of a treatment for that disease. Instead, scientists experiment with a broad range of chemicals. Some of the greatest breakthrough in the industry were found while working on something else. The new diuretics, for example, came while looking for a way to keep the kidneys from excreting penicillin too rapidly.

Walter A. Munns, President
Smith, Kline & French Laboratories
to New York Society of Security Analysts

Survival in a Thermonuclear War

4. Basic Principles of Protection From Hydrogen Bombs

Solomon Garb, M.D.

In this section, Dr. Garb first eliminates the evacuation plan of prior years. This is in line with present Arizona policy of "stay inside." The five foot earth protection mentioned under fireball radiation is available if considered in advance in any underground shelter. The average such shelter is three feet underground, but prior planning can provide for a two foot deeper evacuation.

Community shelters are receiving Federal financial support. This is especially worth remembering in any new school or hospital construction. Applications are presently available at local and state Civil Defense Headquarters.

AT ONE TIME it was thought that evacuation from cities could save people from the effects of hydrogen bombs. However, we now know that an aggressor could cover the entire United States with a lethal level of radioactive fallout. Therefore, evacuation alone would be of no value and would be dangerous.

The most effective measure for protection against hydrogen bombs is the use of shelters. It is advisable to plan on attenuation of fallout radiation to at least one one-hundredth, and probably one-thousandth its outside value. This would give adequate protection against virtually any degree of fallout now known to be possible. To accomplish this thick walls and roofs are needed.

MATERIALS

In theory, it makes little difference what sort of material is used. If the thickness of the material is sufficient to bring the weight up to 300 pounds per square foot, it will provide excellent protection against radioactive fallout. There are several materials which are practical for use as a shielding mass — earth, concrete, and crushed rock.

Concrete. — Concrete weighs about 150 pounds per cubic foot; therefore a layer 2 feet thick is required to provide the 300 pounds per square foot needed for recommended protection against fallout radiation. However, it would be extremely difficult and expensive to make shelters of such thick concrete. Instead, the concrete thickness usually ranges from 6 to 12 inches and earth is packed over it to make up the needed protection.

Earth. — Earth weighs about 100 pounds per cubic foot; therefore a layer 3 feet thick is needed for recommended protection against fallout radiation. Obviously, this weight of earth must be supported and only two materials, reinforced concrete and steel, are suitable. Wood is not usually a recommended supporting material underground since it will decay and rot under the ground, with eventual collapse of the shelter. However, in special circumstances wood might be used.

Another hazard against which shelters might protect is direct radiation from the fireball. This radiation, consisting of high-energy gamma rays and neutrons, is much more penetrating than the radiation from fallout. At least half the persons in an ordinary fallout shelter will die of radiation if the fireball is within a few miles. Protection against this type of radiation requires a mass of about 500 pounds per square foot in each wall and ceiling. This is the equivalent of just over 3 feet of concrete or 5 feet of earth. Since direct radiation from the fireball is only a serious problem within a few miles from the fireball, many shelters do not incorporate the extra protection in their design. However, wherever feasible this additional security should be provided.

Protection from the blast effect of a large bomb depends primarily on the materials comprising the shelter. Reinforced concrete 6 inches thick will support a weight of 3 feet of earth but will probably collapse under any appreciable blast pressure. The earth cover of a basic civil defense shelter, 9 by 12 feet, weighs about 35,000 pounds. A blast overpressure of only 5 pounds per square inch would add a force equivalent to an additional 76,000 pounds and would probably collapse the shelter, burying the occupants. Thicker concrete gives more protection but is also much more expensive.

Steel. — Steel, on the other hand, is much more resistant to blast pressures. Corrugated steel pipe is designed for such peacetime use as culverts and so forth and carries loads far greater than does concrete. A properly buried corrugated steel pipe of the right diameter should give protection against blast overpressures in the range of 50 to 100 pounds per square inch. Roughly speaking, it can be considered at least ten times as strong as the reinforced concrete.

It should be noted that if corrugated steel pipe is used as a shelter, its role is that of holding up the weight of earth above, and, additionally, that of resisting blast overpressures. It is the earth cover that attenuates the radiation. The steel of the pipe is not thick enough to block out much radiation. Indeed, steel would have to be over 7 inches thick to make an adequate shelter unless it were covered by earth.

Corrugated steel pipe has certain advantages and disadvantages for use as a shelter. It is much cheaper than concrete, easier to handle, and much stronger. The major disadvantage is that it must be used in relatively narrow diameters; hence, it is less comfortable than a concrete shelter.

The maximum practical diameter for a steel pipe home shelter is 7 feet. As this diameter is exceeded, strength falls rapidly. It may also help to avoid confusion if one is told that government tests on corrugated steel pipe revealed failure at a relatively low blast overpressure, to note that those tests were done on corrugated steel pipes 20 to 50 feet in diameter. Such pipes are quite weak. On the other hand, tests on pipes 5 or 6 feet in diameter show them to be very strong and capable of withstanding very high blast overpressures.

If reinforced concrete is used to hold up the weight of earth, the minimum thickness should be 6 inches for the ceiling slab and 8 inches for the walls. It must be noted that these minimum thicknesses are for concrete which is heavily reinforced with steel and is perfectly mixed, poured, vibrated, and cured. If any one of these aspects is substandard, the roof may collapse under the weight of the earth. Even if all aspects are perfect, this construction is designed only as a defense against fallout radiation. It probably cannot resist the additional force of a blast wave, even of the relatively low order of 5 pounds per square inch (720 pounds per square foot).

If a more adequate concrete shelter is desired, it would be well to double the thickness of the reinforced concrete making it 16 inches for walls and 12 inches for ceiling slab. This becomes very difficult and expensive because of the forms and braces needed to hold up such a weight of concrete before it sets properly.

For very large shelters, designed as military headquarters, and so forth, reinforced concrete covered with earth is the most practical material since by bracing it with weight-bearing interior partitions and steel beams it can be made quite large without losing much strength. Furthermore, with this type of shelter building costs per cubic foot tend to become lower as the size increases. Although the reinforced concrete shelter has a number of disadvantages for the average family, it has one advantage. It can be built large enough to provide real comfort for the occupants. Thus, someone to whom comfort is very important, and who is willing and able to pay for it, might do well to have a reinforced concrete shelter constructed.

COMFORT

The question of comfort in a shelter requires some consideration. If shelter dimensions are compared to house dimensions, they will seem cramped indeed. However, it must be remembered that a shelter is an emergency, life-saving device. Its dimensions should be compared to those of a foxhole which is also an emergency life-saver. Even the smallest shelter provides much more room per person than a foxhole or, for that matter, a station wagon. In some corrugated pipe shelters it may not be possible to stand erect. However, one can always stretch lying down.

For those who are willing to sacrifice a little

comfort for greater safety and much lower cost, a corrugated pipe shelter covered with earth is a good choice.

WARNING TIME

Another aspect to be considered in discussing shelters is the amount of warning time. If the warning time is short or absent before the bombs burst, most people would not be in the shelters, and therefore, could not be protected against blast, heat radiation, flying objects, or the initial neutron and gamma radiation from the fireball.

On the other hand, there will always be some warning before fallout begins. The bomb flash will be visible for at least 100 miles, and the fallout will not begin for at least 30 minutes, leaving adequate time to reach shelter in most cases.

COMPONENTS OF A HYDROGEN BOMB SHELTER

The following is a list of the components of a hydrogen bomb shelter:

Dimensions. — The dimensions of a shelter should provide at least 70 cubic feet of volume for each occupant. Since some of this space will be needed for food and water storage any extra space will be quite helpful, although not essential. In an emergency, a lesser volume can be tolerated readily. It is worthy of note that the minimum volume, 70 cubic feet per person, is far greater than that provided in an automobile or bus. In the usual sedan the total available space is about 17 cubic feet per person, and of that, a substantial portion is taken up by the seat, leaving less than 15 cubic feet per person of free space. The average human body takes up between 2 and 3 cubic feet.

Location. — It is usually better to locate a shelter outside a house, in a yard. All houses are inflammable, and in a hydrogen bomb explosion houses as far as 20 miles from the fireball may catch fire in the absence of protective measures. The risk of fire is less with houses whose exteriors are brick, stone, or asbestos. A shelter within a house provides a slightly smaller chance of survival than one outside.

In many areas, the water level is within 4 feet of the surface; therefore excavation for a shelter is impractical. In those areas an above-ground shelter covered with a mound of earth will be needed. It will be almost as safe as a shelter beneath the surface.

It may be possible to locate a shelter near several houses. This can be a great advantage in respect to cost. A shelter for two families would not cost much more than a shelter for one family.

Entrance. The entrance to the shelter should be so arranged that there are preferably two right-angle turns before the shelter proper is reached. This is advisable because some scattering of radiation around corners occurs. If the two right-angle turns are not practical in a particular location, there is an an alternative way of protecting the entrance. Sandbags are stored within the shelter, and when the occupants are inside and the door is closed the sandbags are piled against the door to a 3 foot depth to block out radiation coming through the door.

Emergency Exit. — An emergency exit is helpful but not essential. Its major effect is a psychological one, preventing a feeling of being trapped. In theory, the emergency exit would be used if the main entrance were blocked by debris from the explosion. However, debris can be expected only within some 10 miles of the explosion. If an emergency exit is provided, it should be tightly closed, and a 3-foot thickness of sandbags should be piled against the inside of the emergency exit to protect against the radioactivity outside. Alternatively, the emergency exit can be a pipe 36 inches in diameter, filled with loose dry sand, and with a sliding door at the bottom. To use it, the door is opened allowing the sand to pour into the shelter proper.

Electricity. — If possible, a 15 or 20 ampere capacity electric wire should be run into the shelter. During periods when attack seems imminent, it will be prudent to spend as much time as possible in the shelter, and it will be easier to persuade a family to stay there if electricity is available to run the ventilation system, heat food, and provide light.

Aerial. — Each shelter should be provided with an outside aerial for a transistor radio.

Paint. — The inside of all shelters should be painted white or a light color to obtain the greatest efficiency from flashlights.

Other Requirements. — Each shelter should possess an adequate ventilating system, sanitary system, and stored food and water. These items will be considered in detail in subsequent articles.

University of Missouri, Columbia, Missouri

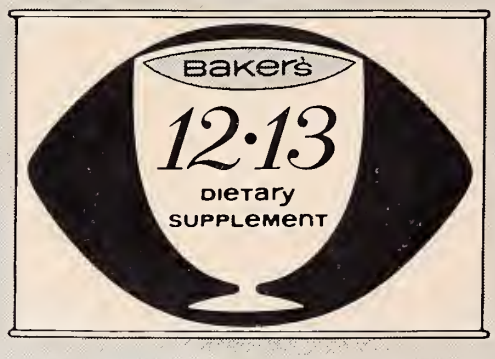
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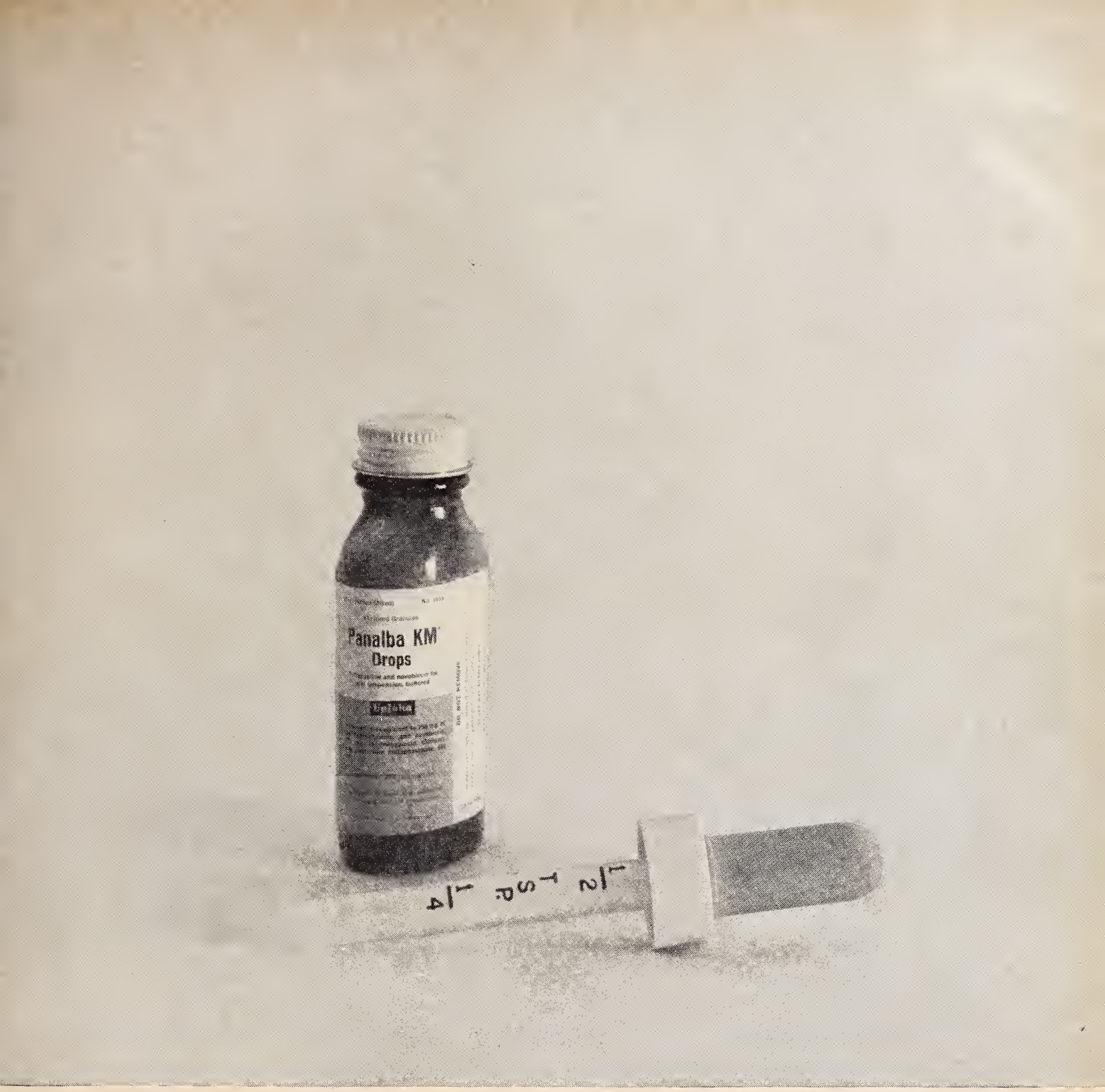
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SOME OF MY BEST FRIENDS ARE DOCTORS

What can a doctor of philosophy say to a group of doctors of medicine? Not much, I am afraid. At least not much of value. He can tell them that his antecedent Socrates pre-dates even their precursor, Hippocrates. Or he can give vent to that most damning of phrases, namely, that some of his best friends *are* physicians.

Yet fools and former newspaper columnists do indeed rush in where angels fear to tread. This is particularly true when a persuasively insistent editor has been trying to cajole a guest editorial out of the writer for some two years.

My position is somewhat analagous to that of the bibulous old Virginian, a victim of progressive deafness, who finally became stone-deaf. He was reminded by by his doctor that the latter had predicted the patient's present state if he didn't curtail his predilection for sour mash bourbon. The old man simply replied, "Well, what I drank was so much better than what I heard that I decided I'd rather be deaf than sober."

Although your editor has kept asking me to give *my* criticisms of medical practices, there are so many more good things than bad about the medical profession that I am reluctant to do so. These are really observations, not criticisms, anyway. Yet I imagine lions must be bearded in their dens, so here goes.

Physicians are too busy. There are not enough hours in the day for them. They are trying to be Ephraim McDowells or William Oslers, seeing too many patients, or trying to attend the next meeting of all sorts of boards, colleges, staffs and societies, *ad infinitum*. And of course they give many hours to charity.

Their busyness stems from a simple desire to minister to sick bodies and minds, to attend meetings of every conceivable type, and perhaps even to attain the next higher income tax bracket. Their lives are symptomatic of the ultra-organized world in which we live — to an exaggerated degree. De Tocqueville more than a century ago may have been right about Americans being inveterate joiners and committee workers but doctors carry even this dictum to

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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Exclusive Publication — Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

7. Reprints will be supplied to the author at printing cost.

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the extreme.

What the solution is, I don't know. I do know that these doctors, brainwashed according to Lindsay Beaton, are too busy becoming more skilled as technicians and not busy enough becoming liberally educated citizens. The millennium will never be reached. Yet physicians must slow down and become family men, neighbors, and intelligent citizens.

A second suggestion is that we need more doctors. I am wholly unimpressed by statistics showing that Arizona might have more doctors per capita than Outer Mongolia or even New York state. More doctors were needed when I lived in Virginia, when I lived in Alabama, when I lived in South Carolina, and now that I live in Arizona. Ask anybody. That is, anybody but a doctor. Maybe the doctors are right and everybody else wrong. But I doubt it.

Despite the high level of medical service in America, there are simply not enough physicians. This obviously means more medical schools and more students in existing medical schools, without any lessening of standards. Interns and residents at hospital emergency wards are not enough. We might even return to the good old days of house calls. More practicing physicians, with reasonable fees, are needed. It is up to the medical profession or society at large led by doctors themselves, to get them. If not, Big Brother will step in. We may call him the federal government, but he's coming, ready or not, sure as shooting, unless the situation changes — and quickly.

My last observation concerns the public image of the doctor. Physicians, rightly or wrongly, have have been put in the position of always opposing something, instead of being actively in favor of something. This applies to the Kerr-Mills law, the King-Anderson bill, and everything else. The work of professional organizations, like the AMA and all the rest, is obviously necessary in this age of what Stuart Chase calls government by pressure groups. Yet AMA pronouncements and certain unwise statements by individual physicians have combined to create a very poor picture of doctors to the average layman.

It is the same problem that exists when a commission of the World Council of Churches makes a statement about some politico-economic problem; the public at large then believes that most non-Catholic Christians share this opinion. Ironically, I have heard many physicians themselves complain about this very thing. In any event, physicians have a poor public image.

Most doctors favor the income tax, social security, some sort of medical care for the aged, and motherhood. I further assume they oppose crime, disease, illness, and sin. But does the public at large know this? I know that countless physicians are close indeed to their patients, many of whom swear by them. But is the gulf that separates the average citizen from the physician so wide that the citizen misunderstands and even mistrusts the physician? I'm afraid it is wider than we think.

It takes many years to become a skilled physician. The time is getting longer, not shorter, despite heroic efforts by Northwestern, Johns Hopkins, and others. Even those of us who have been at universities all our adult lives but are strangers to this *mystique* called medicine, wonder if it really takes this long to produce a physician. I know how expensive it is to obtain a first class medical education. Doctors must charge fees to compensate for these expenses, or so they tell me. But is this known by the average taxpayer?

It is actually more in the democratic tradition to support these skilled professional people by high fees (and let's face it, they are high) than it is to increase taxes so that more doctors will be available — at lower fees, I might add — trained at government expense? Reliable statistics indicate that physicians constitute the highest paid of all our professions. If you don't believe these statistics, just check the membership roll of any country club. Yet these doctors are failing to present well their story, and they surely have one, to the general public. The answer to this problem is obviously difficult. But here again, something must be done now to create a better public image of the doctor.

These then are my conclusions: physicians are much too busy, more doctors are desperately needed now, and the public image of physicians must be drastically improved. These are real, immediate problems which are crying for real, immediate solutions. Remember, they are only my own observations, based on my own experiences. Yet we all are prisoners of our experiences. And, don't forget, I was asked for these conclusions. As for me, back to the groves of academe!

PENDLETON GAINES, Ph.D.

HAIR SPRAY

Modern man is constantly exposing himself to an increasingly wide variety of noxious agents. In many instances expensive exposure has occurred before potential hazards are recognized.

In a recent paper, Bergmann and associates *(New England) Journal of Medicine*, Volume 266, No. 15, April 12, 1962, pp. 750-755) describe the syndrome of "thesaurosis" possibly caused by inhalation of hair spray. The authors discuss 12 new cases including three postmortem studies. That pulmonary infiltrates occur in persons exposed to hair sprays is definitely established. Inflammatory, granulomatous and fibrotic lesions occur but thus far it has been impossible to identify hair spray components in lung specimens. The ingredients most likely to be responsible are PVP (Polyvinylpyrrolidone) and natural or synthetic resins that are not metaboilzed and accumulate in macrophages.

In view of the wide usage of hair sprays, a careful study of this problem would seem warranted. Hair spray manufacturers should be required to caution users against inhalation.

PRESTON J. TAYLOR, M.D.

PROFESSIONAL CORPORATE PRACTICE ACT

The members of The Arizona Medical Association should accept the recently passed professional practice act as it relates to the formation of a corporation with caution. Any program developed along this line must of necessity be acceptable to the Internal Revenue Service, and it is very likely that a test case will be necessary before it is finally accepted.

It seems possible that the passage of a comparable corporation law for the professional services in some 22 or 23 states may nudge the Internal Revenue Service into accepting and encouraging the passage of the Simpson-Keogh Bill.

DARWIN W. NEWBAUER, M.D.

LETTERS TO THE EDITOR

9 May 1962

The Editor
"Arizona Medicine"

Dear Sir:

In "ARIZONA MEDICINE" (April 1962) an original article by Breazeale and Van Horne purports to demonstrate the effect of carbon monoxide on blood sugar.

The authors conclude that insulin administered prior to exposure to carbon monoxide will prevent "the extreme elevation . . . af carbon monoxide in the blood, and also will hasten recovery."

This conclusion is at complete variance with well-documented data. It ignores the chemical affinity of carbon monoxide and hemoglobin in the red cell in vivo. Cursorily it would appear the authors are unaware this affinity cannot be deterred, except as progressive saturation is self-limiting; or altered, except by displacing carboxyhemoglobin with oxygen.

The technique described in this article is at once questionable. It is inconceivable that a rabbit, exposed to an atmosphere "in plastic boxes and the exhaust from an automobile . . ." could survive for 25 minutes; let alone 4½ minutes when "the first sign of distress" was noted.

We have reexamined several blood specimens of individuals who have died from carbon monoxide poisoning. The specimens varied from a few weeks to months in age. Some had been frozen; others were retained at temperatures varying from 38 degrees F to 50 degrees F. Each specimen was permitted to stand at room temperature from 24 to 48 hours. In some instances the cap on the bottle was removed; in other instances the cap was loosened, removed, and replaced loosely. In no case was there "a marked decrease" in the carbon monoxide saturation; rather was there no significant difference reported from the original analysis made previously.

We choose not to discuss the question of hyperglycemia and a direct relationship to carbon monoxide at this time except to say there are many other conditions, including coronary occlusion and various types of asphyxia, that may cause a marked terminal hyperglycemia.

The authors have not stated any real case, in our opinion, for the conclusions they draw from

their experiments. For instance, we note in their tabular data that rabbits No. 1 and No. 2 in Table No. 2 have, at recovery (sic) some "30 minutes after coma", about 30% greater "CO saturation" than rabbit No. 1 in Table No. 1 when that animal first showed "distress".

We believe reports such as this, from which the inference might be drawn that a person unconscious and poisoned by carbon monoxide might be revived quickly by the administration of protamine zinc insulin, should be evaluated carefully with due consideration given to the remarkable affinity of carbon monoxide and hemoglobin.

We disagree with the general thesis expounded by the authors; and we specifically and emphatically disagree that carboxyhemoglobin will dissipate at a rate approximating 50% in blood specimens standing at room temperature for 15 hours.

Admittedly there is much to be learned about carbon monoxidism; but we are constrained reluctantly to conclude that articles such as this, unchallenged, can only compound confusion.

Sincerely,
DANIEL J. CONDON, M.D.
Medical Examiner
Maricopa County
LOUIS HIRSCH, M.D.
Coroner's Pathologist
Pima County

* * *

May 22, 1962
Darwin W. Neubauer, M.D.

Dear Dr. Neubauer:

Your opposition to federal medical care legislation expresses the view of the great majority of mail my office has received from Arizona on this subject.

The King-Anderson bills, H.R. 4222 and S. 909, would tie in medical care benefits for the person age 65 and over to the Social Security System. This is socialized medicine and we both know it can be strongly opposed on strictly philosophical grounds, but there is also a very practical reason for preferring a non-government approach toward solving this problem.

A system which relegates individuals to the impersonal numbers of punch cards cannot hope to provide for the personal attention Americans have come to expect from their doctors. The element of free choice in this regard can not be underestimated and you may be sure, it will not remain if federal medicine is legislated.

Sincerely,
BARRY GOLDWATER

* * *

May 17, 1962
Dr. Darwin W. Neubauer

Dear Dr. Neubauer:

Your recent letter in regard to medical care for the aged has been brought to my attention, and perhaps the best way to reply is to ask you to give consideration to a statement that I am enclosing. I hope that it will clarify some of the questions you might have.

It has long been my policy not to say how I will vote on certain issues and there have been many instances where those who at first asked me to oppose certain legislation have changed their minds and expressed their desire that I support it.

With cordial good wishes, I am

Yours very sincerely,
CARL HAYDEN

STATEMENT BY SENATOR CARL HAYDEN REGARDING THE QUESTION OF MEDICAL CARE FOR AGED INDIVIDUALS UNDER SOCIAL SECURITY

Legislation to carry out the President's recommendations with respect to Federal health care through Social Security is still under consideration in the House Committee on Ways and Means. As was expected, the principal argument is as to whether the Act of September 13, 1960, (the Kerr-Mills bill) which provided for grants to the States for medical care for aged individu-

als of low income, should be continued in effect for a sufficient period of time to demonstrate whether additional legislation is needed.

Normally, legislation such as this, since it involves taxation, must be considered by the House of Representatives before the Senate can act on it. However, there could be a motion made by some Members of the Senate to attach medical care legislation to a revenue bill which has already been acted on by the House of Representatives, in an attempt to bring the issue to a vote in the Senate.

In any event, I will want to know just what is involved in this legislation before I vote on it, but can say that the system of free competitive enterprise under which our national resources have been developed, along with the advances in medical knowledge, has made it possible to create such favorable living conditions that the average American can now expect to live twenty years longer than his ancestors of only three generations ago. As a consequence, there has to be a Social Security system to meet the needs of those who are of advanced age and have made no provision for it. The system is not a perfect one, but it has a firm financial basis and can be expected to continue to serve the purpose for which it was created.

In conclusion, I would like to add that I am fairly well acquainted with the Membership of the Senate, and I have yet to find a Senator who is in favor of socialized medicine. Not one of them that I know would give up the right to select a physician of his own choice to care for his health.

* * *

May 29, 1962

Dr. Darwin W. Neubauer

Dear Dr. Neubauer:

Thank you for your communication in regard to H. R. 4222, the King-Anderson Bill to add health insurance benefits for the aged to the Social Security system. So you will be fully informed on this bill, I am enclosing a brief explanation.

Although I have every sympathy with those who need help, I would not favor a plan like this under Society Security. It is generally agreed that we cannot take more than 10 per cent of the wage of our workers for Social Security. This program, if carried to its ultimate, together with the other benefits under Social Security, would undoubtedly result in a larger percentage than this being taken, and might well wreck the whole Social Security system.

Many of the people who most need help would not be eligible to particiate under the King-Anderson Bill. In my opinion, the Kerr-Mills Act, passed in 1960, takes care of the most pressing need, since it helps the state to help the indigent aged to pay for medical care.

Also, it is my understanding that the forces of free enterprise are working hard to solve this problem. I would not want to approve governmental action which might deter this effort.

Yours sincerely,
JOHN J. RHODES

The King-Anderson Bill will:

Provide hospital services, skilled nursing home services, and home health services (requires deductible charges).

Provide 90 days hospitalization per "benefit period" (a required $10 per day deductible for first 9 days, with a minimum of $20).

Provide 180 days in nursing homes per "benefit period."

Provide 240 visits per year by home health services.

Provide diagnostic, laboratory, and x-ray services while in hospital.

Provide prescribed, expensive drugs used in hospital only.

The King-Anderson Bill will NOT:

Pay doctor bills, or surgeon's bills.

Cover 3 million elderly people who are not un-

der the Social Security system.
Pay dental bills.
Pay drugs and medicine costs, outside a hospital or nursing home.
Pay for the first $10 for each of the first 9 days of hospitalization — total of $90 to be paid by patient if he were in 9 days.
Pay the first $20 for diagnostic study.

The King-Anderson Bill would provide only limited hosital and nursing care — and this would be available to anyone eligible for Social Security, whether they needed it or not. It could also force an elderly person to pay up to $90 of his own hospital bill.

JOHN J. RHODES

May 11, 1962

Dr. Darwin W. Neubauer

Dear Darwin:

Thank you for advising me of your views on the King-Anderson bill, H.R. 4222 and for the enclosed clippings.

I am enclosing a copy of the remarks of Representative Cecil R. King of California in response to testimony of the American Medical Association. I will keep your views in mind and I hope that you will find this statement of interest.

Sincerely,
MORRIS K. UDALL

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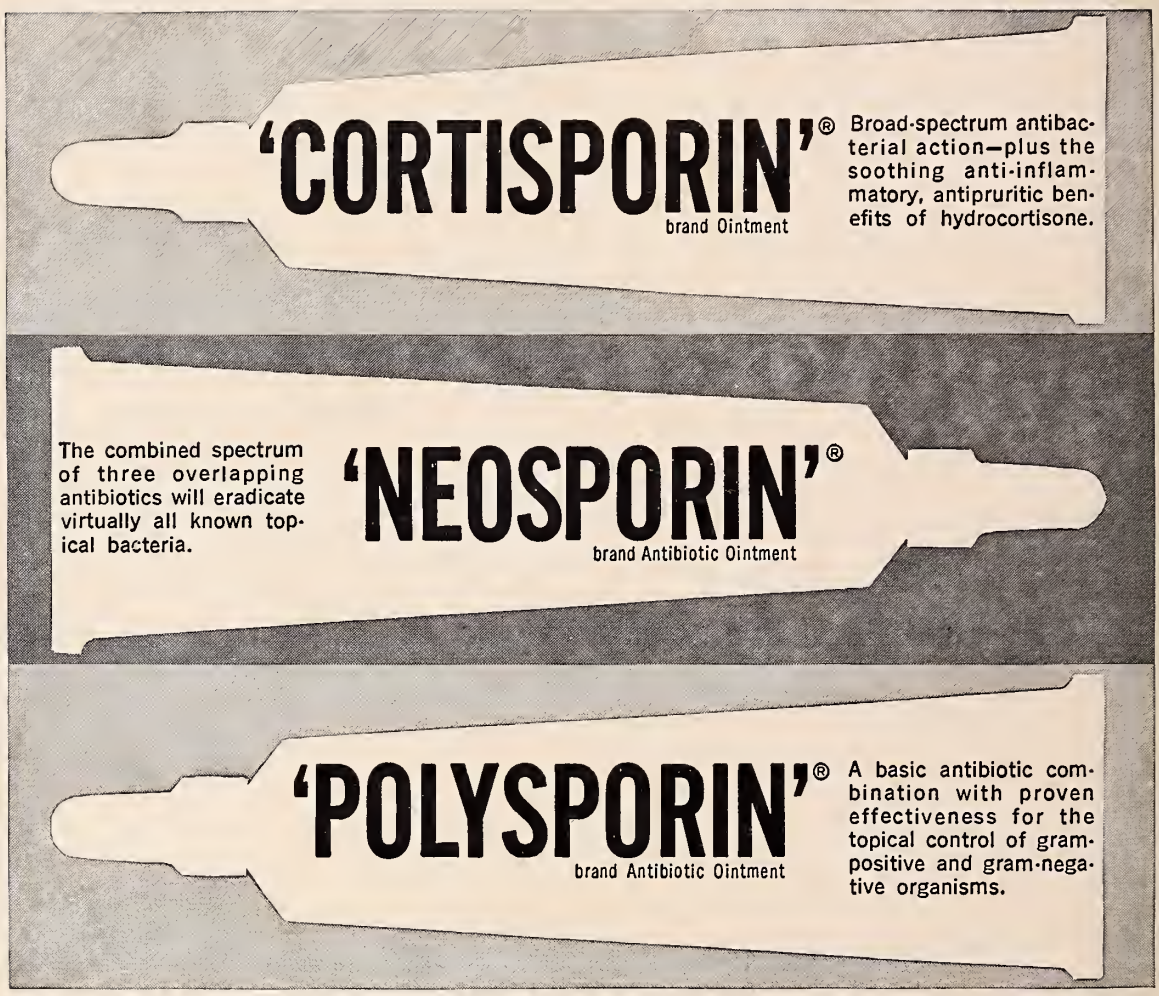
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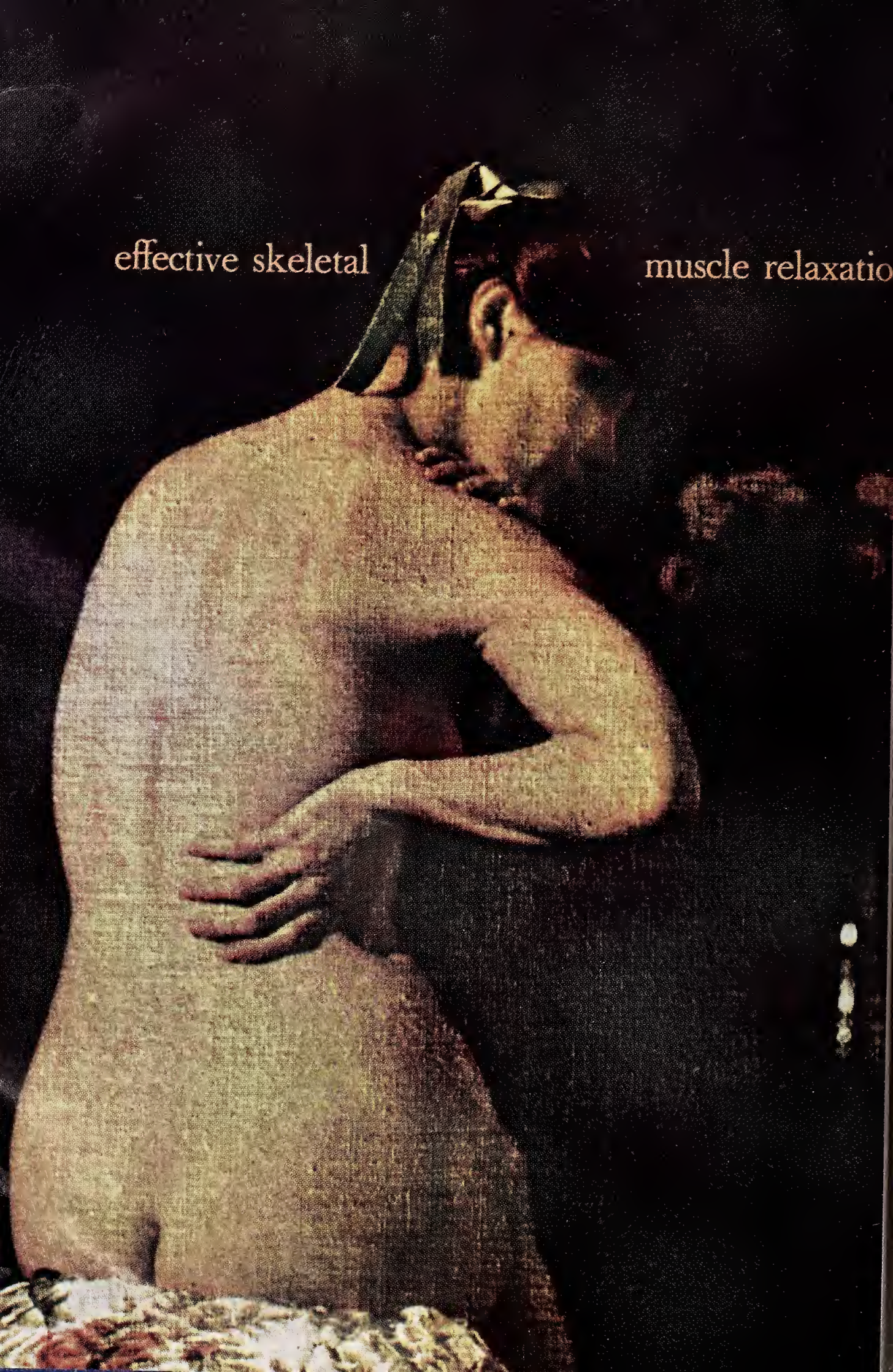
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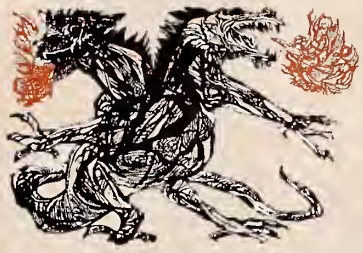
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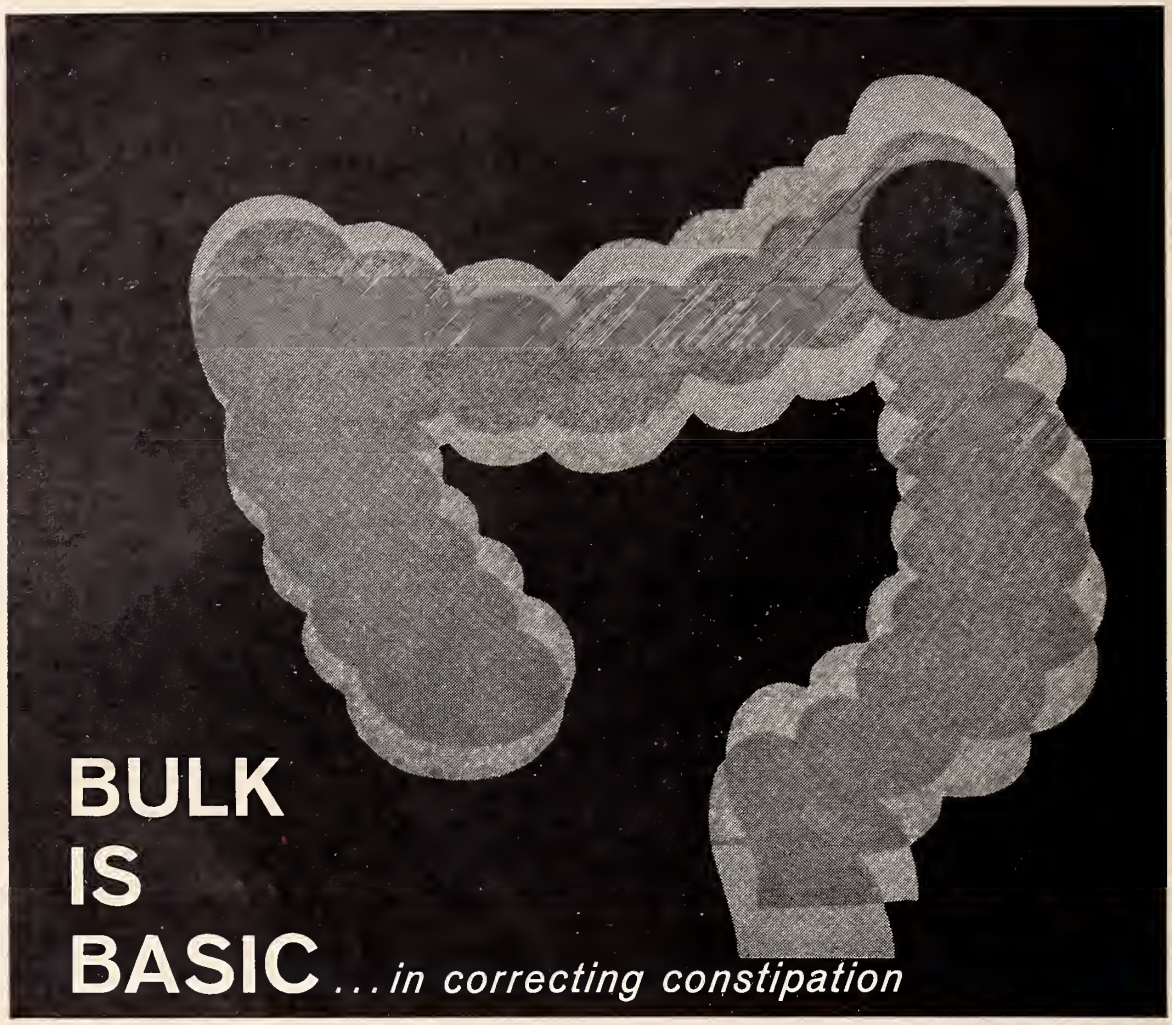
"... remarkably effective ..."[2]

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References: 1. Carpenter, E. B.: South. M. J. 51:627, 1958. 2. Hudgins, A. P.: Clin. Med. 8:243, 1961. 3. Lamphier, T. A.: J. Abdomin. Surg. 3:55, 1961. 4. Levine, I. M.: Med. Clin. N. America 45:1017, 1961. 5. Meyers, G. B. and Urbach, J. R.: Penna. M. J. 64:876, 1961. 6. Perchuk, E., Weinreb, M., and Aksu, A.: Angiology 12:102, 1961. 7. Poppen, J. L., and Flanagan, M. E.: J.A.M.A. 171:298, 1959. 8. Schaubel, H. J.: Orthopedics 1:274, 1959. 9. Steigmann, F.: Am. J. Nursing 61:49, 1961.

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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

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Research in the Service of Medicine

Arizona Medical School Study in Retrospect

Since the presentation of the Arizona Medical School Study report in June of 1961 certain portions have been discussed widely. A considerable number of both favorable and unfavorable comments have appeared in the public and professional press. Obviously it is impossible to answer each criticism. It is the opinion of the Study Director, however, that certain charges are serious enough to warrant refutation. This is particularly true of some of the writings of individual physicians and medical societies and the editorial comments in the major state newspapers. For this reason he sought and received from representatives of the Board of Regents permission to answer these accusations. Initially, it was his intention to do so by adding a section to the Arizona Medical School Study report. After consultation with the Regents this plan was discarded in favor of possible publication in *Arizona Medicine.*

Because the cities of Phoenix and Tucson have dominated many aspects of Arizona life, intracity competition for the location of the first state-supported medical school was not unexpected. The Study staff and the National Advisory Board appreciated this situation and took every possible precaution to exclude personal bias from their judgment. To this end, social contacts were minimized, and comparable relationships were maintained with the academic faculties and the medical profession in both locations. It is possible to say with complete honesty that no member of the staff or National Advisory Board had made any judgments relating to medical education in Arizona at the time the Study was initiated.

Originally, it was anticipated the Study findings would be made public as various questions were answered. It was the opinion of the Board of Regents such a procedure was not feasible. This led to the decision to accelerate the Study schedule and make the report public on June 12, 1961. This procedure permitted the staff to be available for almost three additional weeks to answer questions. The Director has no recollection that any individual or group availed themselves of this opportunity.

The disappointment and the disagreement of the Maricopa County newspapers with the Study recommendations were not wholly unexpected. It should be noted, however, that their initial comments were not unfavorable. In a June 12 editorial the *Phoenix Gazette* stated in part:

> . . . Dr. Volker and his staff have done an herculean job. The report contains much of inestimable value to the state. All who have had a hand in it should be congratulated.
>
> We believe the Board of Regents and other authorities will find in the Volker report a tremendous incentive to begin the long and detailed planning, both economic and technical, which will be necessary before the final blueprints for a medical school can be considered. This is a signal to get other experts together, to get the counsel of doctors and educators and economists, of tax experts and hospital people, in shaping up the design for medical education in Arizona . . .
>
> The decision should be made, and work undertaken to implement it, as soon as possible. The first phasess of planning will be a long chore at best. Not until they are done will it be necessary, nor would it be wise, to fix irrevocably upon a date there (Tucson), here (Phoenix) or somewhere else.
>
> The Volker report is an admirable preliminary guide. One of the things it tells us is that there is still much to be done.*

The *Arizona Republic* of June 14 made a similar editorial comment:

> . . . The report is the result of intensive, dedicated work by a staff of researchers led by Dr. Joseph Volker, director of research and graduate studies at the University of Alabama. Dr. Volker was given a year's leave of absence by his university in order to conduct the medical school study here. Funds for the study came from a grant of $135,000 awarded for the purpose to the board of regents by the Commonwealth Fund. Dr. Volker and his staff have made good use of the time and money at their disposal, and their report is now in.
>
> Earlier in the year, Dr. Volker announced that his studies up to that point showed a

*A Medical School for Arizona, **The Phoenix Gazette**, Monday, June 12, 1961.

clear need for a medical school in Arizona. The remainder of the study was to be devoted to determining the best location of a future medical school, whether it should be a two-year or a four-year school and, if a four-year school was decided upon, the size of the teaching hospital, if any, that should be associated with it. These recommendations and others have now been made to the board of regents. They will study the report and announce their future course of action with reference to it at a later date.

Undoubtedly Dr. Volker's report is soundly based and is certainly impartial. But we trust that the board of regents will seriously consider the very obvious advantages of Maricopa County and the ASU campus as the site for a medical school, before reaching its decision in the matter. If Arizona is to have a medical school, it must be satisfied with nothing but the very best in every minute detail.*

The Study staff were perturbed by a letter to the editor published in the *Arizona Republic* of June 16, 1961, entitled "No Secret." It was signed by a Joseph Carlisle, M.D. of New York City and infers that the Study findings were an "open secret" to the physicians of Phoenix before they were presented to the Regents. Since this was a serious charge, a concerted effort was made to contact the writer. The newspaper was unable to furnish his mailing address. Attempts to locate him through the American Medical Association's official directory were unsuccessful. It is pertinent this official publication does not list any person with this name as practicing in New York City.

On July 1, 1961, the resident activities of the Study staff were terminated, and the Director went abroad shortly thereafter. During this period a considerable number of articles critical of the Study appeared. Included in this group was a widely circulated document entitled "An Analysis of the Preliminary Report, Arizona Medical School Study," released on July 1, 1961, by the Board of Directors of the Maricopa County Medical Society. Although the information presumably was prepared during the last two weeks of June, a time when the Study staff was in residence and available for questioning, they were not contacted. Upon his return, the Director communicated his opinions about these and other matters to Mr. John Babbitt, chairman of the Board of Regents' committee on medical education. An excerpt from the letter is pertinent:

Arizona press clippings eulogizing and condemning the "Volker Report" were forwarded to me in England and Iceland. My first reaction was to issue a series of public statements answering the critics. When I learned of the intention of certain state newspapers to publish the summary in full, I decided against such a procedure. It is my belief that the report is unbiased and adequate and that an informed citizenry will come to the same conclusion. It is my further belief that a series of "letters to the editor" from members of the Study staff and the National Advisory Board would serve only to increase bitterness and partisan feelings and delay the establishment of a high quality medical school in Arizona. It seems desirable, however, to make certain comments to the Medical School Committee of the Board of Regents. These relate to some of the more common criticisms of the report. They include the following charges:

(1) *The failure to give adequate consideration to Maricopa County's offer to make their proposed hospital available as the center for medical school clinical instruction.* Obviously, this criticism is unfounded since the offer was made *after* the report had been submitted to the Board of Regents. The possibility of such a relationship, however, had been carefully considered by the staff and National Advisory Board and was the subject of special attention by Mr. Matthew McNulty and Mr. James Crank, our hospital consultants. It is dealt with in detail in their report, "Review of Representative Hospitals and Appraisal of their Potential for Cooperating in Medical Education, State of Arizona." This document is in the staff files and is available for your examination. It is summarized in "Review of Representative Arizona Hospitals," one of the volumes presented to you on June 12. It should be called to your attention that the new four-year state medical schools at Kentucky, Mississippi, Florida, West Virginia, North Carolina, and Missouri have recognized the

*Arizona's Medical School, **The Arizona Republic**, Wednesday, June 14, 1961.

wisdom of having university hospitals for clinical instruction of their students in the health sciences. Others such as the University of Washington and the University of Utah that have previously been dependent upon non-university hospitals for clinical instruction have elected to develop university hospitals. The Board of Regents may be assured that the membership of the National Advisory Board contained individuals with sufficient experience in this area to offer sound counsel.

(2) *Failure to recognize that the academic facilities of the Arizona State University approached, equaled, or surpassed those of the University of Arizona insofar as support for medical education was concerned.* I believe the recommendations of the Study staff and National Advisory Board are adequately documented in the summary report. Obviously, the Board of Regents has intimate knowledge of the developments and achievements of the two institutions, but if you wish, I would be glad to make our very extensive materials available for your inspection.

(3) *Inability to appreciate that the community resources of Phoenix relating to medical education far exceed those of Tucson.* Persons making these statements do not distinguish between education and service. Obviously, Phoenix has more people, more hospitals, more doctors, more internships, residencies, etc. These service advantages do not begin to counterbalance the educational advantages of the University of Arizona at Tucson. The emphasis in medical education should be on the quality of instruction and not the numbers of patients. In fact, an excessive service obligation can affect adversely an educational program. As stated in the report, almost all medical educators regard intimate affiliatiion with the strongest possible university as the decisive factor in locating a new medical school. The size of the community is of importance only insofar as it can provide sufficient numbers of patients for medical teaching and research and the limited number of part-time instructors needed to complete the staffing of the basic science and university hospital departments. Tucson qualifies very easily in both these respects.

(4) *The lack of qualification of the Director and the ineffective role of the National Advisory Board in the Study.* While he does not have the M.D. degree, he holds the Ph.D. degree as well as the D.D.S. It should be noted that persons with the former degree comprise a substantial portion of the full-time faculty of medical schools, and a number of them have served as deans of medical schools. For almost a quarter of a century, the Study Director has been a teacher, investigator, and administrator in institutions devoted to the instruction of medical, dental, and graduate students. During more than half of this period, he has had a major responsibility for the development of medical, dental, and graduate education and research at the University of Alabama Medical Center. It has been implied that the National Advisory Board members were not informed of the staff work and functioned more or less as a "rubber stamp" body. You may ascertain the validity of this criticism by contacting the members individually. It should be remembered that adequate representation from the group was present at the time of the June 12 presentations to the Board of Regents, the Medical Association liaison committee, and the Citizens Committee.

Several members of the medical profession have publicly expressed the opinion that the Study staff did not give proper attention to the use of non-university local hospitals for the clinical teaching of medical students. A statement attributed to Dr. Jackson Harrison Friedlander, the manager of the Phoenix Veterans Administration Hospital, in the July 4, 1961, *Phoenix Gazette* is typical of this attitude: "Pointing out that Harvard University has gotten along without its own hospital for hundreds of years, Friedlander said his offer of the VA hospital to the prospective state school would obviate the school's building a hospital of its own." The Study Director finds it very difficult to understand these remarks. The relationship between Harvard, a long-established private institution with a group of internationally renowned private hospitals, some of which are immediately adjacent to the medical school, is unique. It has evolved over a long period and has been made

possible only because of very substantial financial support from private individuals and foundations and other revenue sources. It is extremely doubtful these conditions will exist in the foreseeable future in Arizona cities. It should be noted that the Study Director has considerable firsthand knowledge of the Harvard operation. For seven years he was a faculty member of a unit of Tufts University which was located in the immediate vicinity of Harvard Medical School. Presently he is serving as a member of the Committee of the Board of Overseers of Harvard College to Visit the Medical School and the School of Dental Medicine. It is also relevant that the University of Alabama Medical Center includes a Veterans Administration Hospital and that the Study Director has had long term service on its "Dean's Committee," the official liaison group between the VA Hospital and that medical school. This experience has not produced any evidence that the presence of a VA hospital "obviates" the need for a university hospital.

Shortly after the Study findings were presented, several newspaper articles carried critical statements (*Phoenix Gazette*, June 21, 1961; *Tempe Daily News*, August 15, 1961) quoting spokesmen for the Arizona Medical Educational Foundation. Since this is an impressive name, the average person would presume the group had considerable source material to justify their charges. This may be the case, but the Study staff was never able to ascertain what, if any, special information the group possessed. A review of the Study files indicates that on August 16, 1960, and January 10, 1961, letters were written to a prominent area businessman who was identified to us as chairman for the group. Nothing developed from these contacts.

Another general criticism of the Study report was its failure to give adequate consideration to the *Plan for Hospital Development — Maricopa County* which was prepared by the James A. Hamilton Associates. This is referred to in considerable detail in *A Review of Representative Hospitals*, pages 127-128 prepared for the Study by its consultants, Matthew F. McNulty, Jr. and James E. Crank. It should be recorded that the activities of the James A. Hamilton Associates became known to the Study staff shortly after they began operation. The members of the Study staff and the National Advisory Board reviewed the "Hamilton Plan" and were quite concerned with the thoughts contained in several sections, particularly those dealing with medical education and the location of a medical school. A review of the Study staff files reveals that in early 1961 a member of the Hamilton group accepted an invitation to meet with the Study staff for discussion in these matters. There is no record that he availed himself of this opportunity.

On one occasion the Study Director deemed it necesary to respond to editorial criticism because the charges were so misleading. The August 15, 1961, *Arizona Republic* charged in an editorial, "Not the Last Word":

> . . . The heart of the Volker Report, it seems to us, is insistence on the location of the medical school and a hospital on a university campus. This is not surprising, since Dr. Joseph Volker, who directed the making of the report, is used to the hospital-on-campus setup at the University of Alabama. Of the eight men on the National Advisory Board, six are on the staff of the University of Alabama Medical Center. But despite their orientation toward on-campus medical school hospitals, very few of the states in the country are following this plan. . . .

His reply in a letter to the editor (*Arizona Republic*, September 11, 1961) is self-explanatory.

> . . . Because I know your newspaper is interested in presenting its readers with factual information, I hope you will call to their attention the following observations:
>
> The University of Alabama does not have a teaching hospital-on-campus setup. Our medical center is located in Birmingham, the university proper in Tuscaloosa.
>
> No member of the National Advisory Board was a member of the faculty of the University of Alabama. Six staff members of the University of Alabama served as consultants for selected phases of the study. In each instance they were well qualified by previous experience for their assignment. Not one of them participated in the decision recommending the location or the affiliation of the proposed medical school. The latter matter was carefully studied by the National Advisory Board and they were in unanimous agreement on the findings.
>
> In recent years a considerable number of states have voted to establish four-year

medical schools or to expand existing two-year facilities to four-year facilities. Included in this number are Kentucky, Mississippi, Florida, West Virginia, North Carolina, and Missouri. Each of them has recognized the wisdom of having university hospitals for clinical instruction of their students in the health sciences.

All of them have located their teaching hospital on the campus, with the exception of Mississippi. In this case the decision was made to locate the medical school in Jackson, primarily because the university community, Oxford, had a population of less than 10,000. It is pertinent also that the University of Washington and the University of Utah, institutions that have previously been dependent upon non-university hospitals for clinical instruction, have elected to develop university hospitals.

Dissatisfaction with the report is also noted in the December 17, 1961, edition of the *Arizona Republic*. This issue devoted considerable space to a report of the Citizens Committee on Medical School Costs headed by Mr. Rex Staley and Dr. Robert A. Price who is reported as pointing out:

> . . . that county hospitals have been "outstandingly successful" in teaching in many areas of the country.
>
> For example, Dr. Price said, Cook County Hospital in Chicago is used to train medical students for four medical schools including Northwestern University, University of Illinois, Loyola University and the University of Chicago.
>
> "To my mind," the report quotes Dr. Price, "it would be outright folly for the state taxpayer to spend $10 million or more for a university hospital in Tucson, when Maricopa County is already in process of building an ideal facility, the use of which would not cost the taxpayers a penny."

Since Dr. Price's appraisal of conditions at Cook County Hospital was not in keeping with the impressions of the Study Director, the present relationship of these Chicago medical schools to the hospital was requested from the offices of the respective deans. One reported that the facility was not used, the others reported limited use. In no instance was the hospital utilized as a major base for undergraduate medical school instruction.

In the same article Dr. Price joins with others in advocating the establishment of a four-year medical school in Maricopa County. This is in contrast to a signed editorial that appeared in the *Round-Up* several months earlier in which he concludes, "It would seem more wise if the people demanded that we reconsider the proposal of Dr. Gammage, that we establish a two-year school of medicine and soon. When that is securely operating, a gradual expansion could be made to the clinical years at the new Maricopa County Hospital which is even now being planned as a teaching hospital."* Obviously, it is very difficult to give careful and considerate comment to such inconsistencies.

The December 1961-January 1962 issue of the *Round-Up* included an article authored by H. L. Payne entitled "Was the Volker Study Fairly Made?" The rather serious charges contained in the manuscript were quoted extensively in the Phoenix, Mesa, and Tucson papers. Since the *Round-Up* is the official publication of the Maricopa County Medical Society and the charges contained in the article are at the least misleading, the Study Director attempted by personal conversations and by correspondence to ascertain the editorial policy of the publication. Mr. Len Welch is listed as the Editor of the journal. Upon inquiry at the central office of the medical society, the Director was told this is a part-time activity for Mr. Welch; his primary employment is with one of the Phoenix daily newspapers.

A letter addressed to the President of the Maricopa County Medical Society contained the specific request, "I would appreciate having at your earliest convenience a statement indicating the qualifications and responsibilities of the Editor and the official policy of the journal as it relates to acceptance and publication of manuscripts by members and non-members." A subsequent reply indicated only that "*Round-Up*, the publication of the Maricopa County Medical Society, is a magazine with the purpose of disseminating information to the medical profession in Maricopa County and to discuss matters of general interest to the medical profession." This answer leaves the impression that no attempt is made to evaluate data submitted for

*Price, Robert A., Some Thoughts About A Medical School. Round-up. 7(9): 4-5, September, 1961.

publication.

The Payne article begins with the statement, "The claim has been advanced that the Volker Medical School Report is the result of an impartial study by out-of-state experts and is therefore entitled to great credit. The following train of events and facts seem to show that this report was not the result of an unbiased study." It then presents twenty-five numbered comments. The first ten are concerned with events that transpired before the initiation of the Study. A considerable amount of the material in Sections 11 through 20 is directly concerned with Study staff personnel and their activities. For the sake of clarity these criticisms will be quoted from the pertinent section and will be followed by a comment.

> Section 11. Thereafter Dr. McCormick suggested, among other names, that of Dr. Joseph F. Volker, of the University of Alabama, for the position of director of the study, whereupon the board of regents approved his selection . . .

The Study Director was not selected by Dr. McCormick. Dr. McCormick, acting under the direction of the Board of Regents, arranged for the Study Director to be interviewed by the Board at one of its regular sessions. After the interview the Board voted to employ him.

> Section 12. Dr. Volker's report of June 12, 1961, which he calls a preliminary report, shows that in making his survey in Arizona he closely followed the procedure set up by Dr. Poor, upon which the donation of the Commonwealth Fund had been predicated, and shows that he manifestly disregarded the population, hospitals, medical facilities, medical specialties and other advantages of the Phoenix area, and tended to emphasize those facilities of the Univeristy of Arizona which were older and more numerous, but which had little to do with medical education or the location of a medical school.

The author ignores the fact that when the summary report was presented it was accompanied by five additional reports entitled "The Arizona Physician," "The Arizona Dentist, Nurse, Osteopath, and other Health Manpower." "Review of Representative Arizona Hospitals," "Arizona: An Appraisal of a Growth Economy," and "State and Local Taxes in Arizona." The existence of these documents refutes the charge that the areas cited were disregarded.

> Section 13. The elaborate outline prepared by Dr. Poor called for a committee of medical men resident in Arizona to advise with the director, and it is interesting to note that of the medical doctors who had appeared and testified before the July 11, 1958 meeting in Flagstaff of the medical education committee of the board of regents, only one of those who had testified in favor of the Tempe school and the acceptance of the McCune offer was appointed by Dr. Volker on that advisory committee, while the two doctors who had testified most positively against the acceptance of the McCune offer, that is to say, Dr. Melick and Dr. Manning, were both appointed on that state committee. While the state committee was divided between doctors resident in Tucson and those resident in Phoenix, it is remarkable that a Phoenix doctor was selected who served with the president of the University of Arizona on the WICHE board and had been most positive in his testimony against the McCune offer. A scrutiny of that committee shows that it was manifestly packed in favor of the Tucson area.

The statement that the Study Director appointed the advisory committee is in complete error. The state medical association was requested to nominate the committee, and those selected were appointed by the Board of Regents.

> Section 14. Dr. Volker, himself, according to his report, selected all of his out-of-state advisors. In the light of the packing that we know of it is reasonable to assume that these men may well have been chosen by Dr. Volker because of their predilection for his viewpoint and that of Dr. Poor whom he was so closely following. These men were window dressing designed to add weight to the study but I am informed they spent little time on it.

This assumption is without foundation. The members of the National Advisory Board were selected because they were qualified by training and experience for the particular assignment. The original application to the Commonwealth Fund described the talents that should be included in the group, and the Study Director recruited outstanding persons in each of the prescribed categories. Since he was not person-

ally acquainted with some of them before the initiation of the Study, their "predilections" were unknown. As window dressers they were particularly active. A review of the Study files indicates the National Advisory Board and consultants to the Arizona Medical School Study spent more than 160 days within the state. Each of them was fully informed on the staff work, and each voted on all of the major conclusions of the report.

> Section 15. Also it is significant to note that according to the Volker report, Dr. Volker got Dr. R. S. Poor to come back into the study as an advisor during the course of the study. He knew Dr. Poor's predilections and apparently wanted some help in his effort to sustain the position that a land grant college with a major part of its work devoted to agricultural research, should be the site of a medical school.

Dr. Poor was not an advisor to the Study. He did not participate in any of the decisions made by the Study staff. His assignment is best understood by the following quotation from his employment letter: "This will confirm our conversation in which I expressed the hope that you would be willing to serve as a consultant to the Study and advise us as to the problems associated with developing the allied health groups as part of a medical school master plan." There is no reason to suggest that the Study Director would be overly impressed with agricultural research as it relates to medical education. During the last quarter of a century he has been affiliated with education in the health sciences at the Univeristy of Rochester, Tufts University, and the University of Alabama. Each of these institutions has medical and allied health schools; none has a school of agriculture.

> Section 19. The Volker report shows that a so-called citizens advisory committee of 52 prominent Arizonans was chosen at the request of Dr. Volker, in accordance with the Poor recommendation. But Dr. Volker did not discuss with this committee the location of a medical school, nor advise with them about that question at all. He did not avail himself of any thoughts they might have about saving the money of the state taxpayers. His first mention of location to this "citizens advisory" group, was when he announced the decision his staff had made in favor of Tucson, when he released his report on June 12, 1961. The selection of this citizens committee was an idle gesture, and no one could blame its members for the disgust a number of them have manifested.

The citizens group referred to was projected and their duties outlined in the study plan submitted to the Commonwealth Fund. Their relationship to the Study is clearly stated in the letter of invitation:

> At the present time I am serving as Director of the Arizona Medical School Study. This undertaking, which is under the supervision of the Board of Regents of the Universities and State College of Arizona and supported by a grant from the Commonwealth Fund, has as its primary purpose the collection and analysis of data pertinent to the need for a medical school in Arizona. It is anticipated that the recommendations of the Study staff will serve as a guide to state officials in their future consideration of the problem.
>
> The operation of the Study provides for appointment by the Board of Regents of a Citizens Committee of considerable size, comprised of representative leading citizens throughout Arizona. It is planned to have this committee meet at least twice during the Study, once within the next few months for orientation and a progress report and again at the end of the Study for a final report.
>
> The Regents have authorized me to contact the individuals they have nominated for Committee membership. I am hopeful that you will participate. Would you please indicate as soon as possible, using the enclosed card, your willingness to serve. If you have any questions in the matter, please do not hesitate to call upon me.

Although only two meetings were anticipated, two additional meetings were held for the convenience of the members; one of these was in Phoenix, the other in Tucson. The Study files indicate that in early April a considerable amount of pertinent material was distributed to the Citizens Committee, and an accompanying letter reiterated the Director's willingness to meet with them in small groups for more complete discussion of Study activities.

Section 20. The Volker report almost had to

decide against starting with a two-year medical school, because otherwise he would have shown up the error of his sponsors, who had been so positive in opposition to the McCune proposal. He brushed off the idea of starting with a two-year medical school, and advocated a very expensive four-year installation at Tucson, notwithstanding the fact that our neighboring state of New Mexico inaugurated a two year medical school at their largest city, Albuquerque, while this Volker study was in progress.

The Study staff and the National Advisory Board paid special attention to this problem. This is attested in the summary report which states:

> The Study staff and the National Advisory Board have carefully considered the matter of a two-year school. A sub-committee of the latter group, Doctors Bowers, Darley, Stowe, Tenney, and Wiggins, has given the question special attention. It is the unanimous opinion of the Advisory Board and the Study staff the indications for a four-year school are overwhelming. If a contrary decision is made, it is predictable that within a very short time the state's obvious need for physicians and the increasing evidence of its ability to support a medical school will result in a conversion to a conventional four-year program. The subsequent move would require considerable expensive replanning.
>
> This recommendation should not be construed to mean Arizona should not consider at some future date the development of an additional medical educational facility in the form of a two-year school. It is possible this may be a logical decision when circumstances are different. Indiana, which supports one large medical school, is now in the process of developing a second program. It has elected to initiate a basic science operation.

On January 17-19, 1962, the Study Director visited in Arizona. Although his primary purpose was to arrange for publication of the report, he accepted invitations to meet with several organizations for discussion of the report. Included in the groups were the Phoenix Press Club and the Board of Directors of the Maricopa County Medical Society. He also agreed to participate in two television programs. One reaction to these endeavors was an editorial in the January 19, 1962, *Arizona Republic* entitled "No Alternatives." In part the editorial states "The Procrustean plan he has fashioned for the medical school is a four-year institution on the campus of the University of Arizona with its own hospital. The doctrines of 'no alternatives' is basic in his thinking." The allusion to Procrustes is interesting. Webster defines him as "A legendary highwayman of Attica, who tied his victims upon an iron bed, and stretched or cut off their legs to adapt them to its length."* It further describes the adjective Procrustean as meaning "harsh or inflexible in fitting (someone or something) to a preconceived idea, system, etc." The Director does not believe the word usage is appropriate. He can state without equivocation that no one associated with the Study operation had "preconceived ideas" regarding medical education in Arizona. Everyone tried to be as objective as possible, and judgments were made independently and were unanimous.

It is true that the Study did not give primary consideration to alternatives. It was the understanding of the Study staff and the National Advisory Board that their principal purpose was to establish the extent of Arizona's need for a mediacl school and, if a need was shown to exist, to advise the state as to the best possible way to meet the need. This they have tried to do. They have recognized that circumstances may make it necessary to deviate from their recommendations. This attitude is best illustrated by a quotation from the summary report that has been totally ignored by critics:

> If, for some unforeseen reason, construction of a university hospital were delayed, other facilities in the community would have to be substituted. It is also conceivable that as a medical school expanded it might wish to develop supplementary teaching beds in other hospitals of the community. The offer of the Tucson Medical Center should be taken as evidence that Tucson could respond to either emergency. The Veterans Administration Hospital in Tucson has indicated a similar willingness to cooperate in the development of medical educational

*Webster's New Collegiate Dictionary, Springfield, G. & C. Merriam Co., Publishers, 1959, p. 673.

programs. The latter arrangement is relatively common in the United States and under certain conditions functions satisfactorily.

Another response to the Director's visit was a letter to the editor from Regent O. D. Miller appearing in the *Arizona Republic* on January 31, 1962. Among other things, Regent Miller takes sharp exception to the academic concepts of the Study staff and National Advisory Board. The Study Director readily admits that he is an academician and that he believes medicine is fundamentally a university discipline. He is not unaware of the weaknesses of universities, but he is also appreciative of their great strengths and unique resources. These were very effectively stated by Alfred North Whitehead when he wrote:

> The universities are schools of education, and schools of research. But the primary reason for their existence is not to be found either in the mere knowledge conveyed to the students or in the mere opportunities for research afforded to the members of the faculty.
>
> Both these functions could be performed at a cheaper rate, apart from these very expensive institutions. Books are cheap, and the system of apprenticeship is well understood. So far as the mere imparting of information is concerned, no university has had any justification for existence since the popularization of printing in the fifteenth century. Yet the chief impetus to the foundation of universities came after that date, and in more recent times has even increased.
>
> The justification for a university is that it preserves the connection between knowledge and the zest of life, by uniting the young and the old in the imaginative consideration of learning. The university imparts information, but it imparts it imaginatively. At least, this is the function which it should perform for society. A university which fails in this respect has no reason for existence. This atmosphere of excitement, arising from imaginative consideration, transforms knowledge. A fact is no longer a bare fact: it is invested with all its possibilities. It is no longer a burden on the memory: it is energising as the poet of our dreams, and as the architect of our purposes.*

The Study Director believes that medical education needs and should have the environment described by Whitehead. He is confident that it is available in adequate measure on the campus of the University of Arizona at Tucson.

A philosophy similar to Regent Miller's is expressed by Dr. Jack Brooks, the president of the Maricopa County Medical Society, in the February 1962 issue of the *Round-Up*. In commenting on the report, he states:

> We are not looking for education at bargain prices, but for education that will fill our needs at a price we can afford. Having sections on nuclear medicine closely allied with graduate departments in physics has its advantages. However, it also has its inherent dangers. Securing grants for basic research becomes paramount. Time, brains and money are directed more and more towards research at the expense of teaching, thus defeating our primary aim.

Apparently Dr. Brooks believes that fundamental research and effective medical teaching are incompatible.

A more serious charge contained in the same article states:

> Perhaps Dr. Volker's mission did not direct the inclusion of alternate plans and a discussion of their advantages in his report. However, in his recent interview with the Medical School Committee of the Arizona Medical Association he stated that a medical school established here in Maricopa County, utilizing the County Hospital would be above average.

The Study Director's reaction is indicated in a quotation from his letter of February 19, 1962, to Dr. Brooks:

> I do not recall having made this statement. Nor do I consider my recent meeting with the Medical School Committee of the Arizona Medical Association as an *interview*. I did participate in a *closed dinner meeting* with that group. Many matters were discussed, and insofar as I know, there is no verbatim transcription of the session. Under these circumstances, it is easy to mis-

*Whitehead, Alfred North, The Aims of Education and Other Essays. New York, The New American Library of World Literature, Inc., 1953, p. 97.

interpret any statement for selfish purposes.

Obviously the meeting included discussion of the uanimous recommendation of the Arizona Medical School Study staff and National Advisory Board that the establishment of a medical school and university hospital in connection with and on the campus of the University of Arizona would assure the state of the highest possible quality of medical education. We have presumed this is what the people and the medical profession of the state desire, and we believe our economic and tax studies document the state's ability to develop such a program. We have never said it would be *impossible* to establish and operate a medical school under the circumstances advocated by the Board of Directors of the Maricopa County Medical Society. Only the most elastic editorial policy, however, could interpret these comments as *an admission* that a medical school established in Maricopa County, utilizing the County Hospital, *would be above average.*

Your indirect quotation of my opinions is particularly unfortunate and unnecessary, especially when I appeared before the Maricopa County Medical Society Board of Directors and answered directly every question from the group.

As the Arizona Medical School Study report goes to press the Study staff and the National Advisory Board hope partisan feelings so evident to date will be replaced by a common and concerted effort to assure high quality medical education for the state. They are hopeful their findings will serve as a keystone for the ultimate development of teaching, research, and service in the basic health sciences. Arizona needs, wants, and has the resources to achieve this objective. It seems appropriate to terminate our activities as they began with the statement of Malcolm P. Aldrich, President of the Commonwealth Fund, when he announced the awarding of the Study grant, "It is our hope that this study will point out many of the health and medical needs of the State as well as the factors involved in trying to determine whether Arizona needs a medical school. Also, if it does need such a school, what type it should be and where it should be located. We hope that regardless of the final decision recommended based upon an unbiased study, all of the people involved will accept the survey's recommendation wholeheartedly."

JOSEPH F. VOLKER
FEBRUARY 22, 1962

DRUG CHARGES IN HOSPITALS

With increasing frequency one hears complaints from the public that hospitals are charging exorbitant prices for their services, and, of these, the chief targets seem to be the charges for drugs. When one reviews statistics of drug charges made by general hospitals, he cannot help wondering if the prevailing practices of hospitals in cost accounting and fixing charges are valid and realistic. Certainly, the impressions are gained either that some of the hospitals are not very businesslike in their financial affairs or that they are attempting to use their pharmacies to cover losses in other areas. Neither of these impressions is reassuring to the public.

Robert S. Myers, M.D., in *The Modern Hospital*, August 1961.

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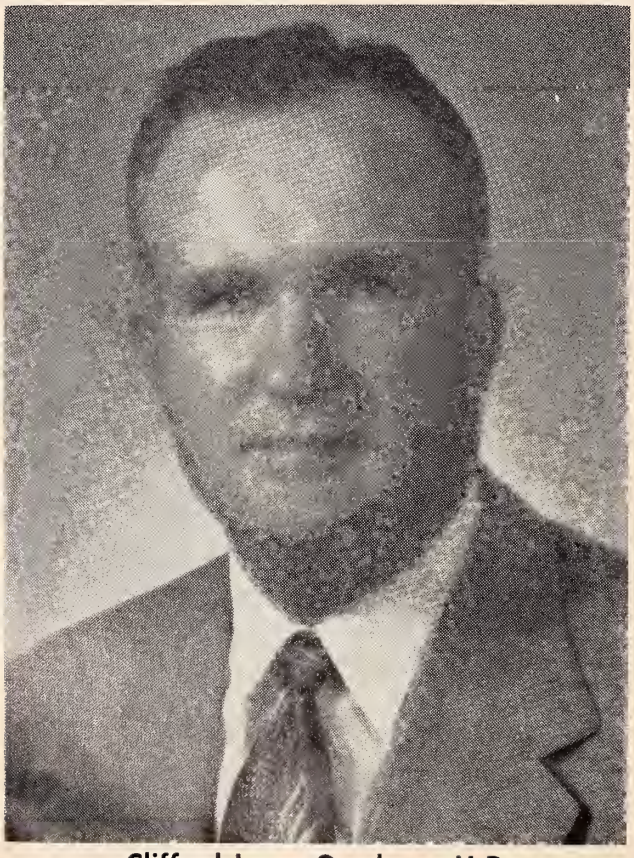


Clifford James Goodman M.D.

1921 - 1962

Clifford James Goodman was born August 8, 1921, in Safford, Arizona, of a pioneer family. His father, George N. Goodman, was known to most of us as the owner of the Apache Drug Store in Mesa, a civic leader, a long time Mayor of Mesa and one of the men who helped to bring Williams Field to the Salt River Valley. His mother, Clara Platt Goodman, was the daughter of Doctor William Platt, a prominent pioneer physician of Graham County.

The Goodman family moved to Mesa in 1923 and Clifford entered the public school system in September of 1926. This is where my friendship with him began. We experienced most of the things that boys do together, cops and robbers, wrestling, boxing, touch football, marbles, Halloween window soaping and doorbell ringing, and even grapevine smoking in the seclusion of our forts and caves. We even found that we had tempers and met many times in combat, emerging with glorious black eyes and swollen lips. I believe that our greatest glory was our horses. We rode them all over Mesa and the nearby river wasteland.



Clifford James Goodman, M.D.

We had our idols and like the boys of today, Clifford once tried to imitate Tom Mix and jumped from the roof to the back of his horse, the only trouble was the horse had moved. In school, our first grade teacher seemed to like us, in fact so well she kept us there an extra year. After this one failure, Clifford never once got far behind the very top of his class and he graduated from the eighth grade at Franklin School in 1936 and promptly entered Mesa Union High School that fall. He was ambitious to become a physician like his grandfather and thereafter devoted his energies to that end. In high school, he was a member of the Art Club, the Camera Club, the Letterman's Club, the Student Council, and played baseball and football.

During his Junior and first part of his Senior year, he courted Miss Earlene Ellsworth and on January 13, 1940, they were married in Florence, Arizona. Clifford continued to work in his father's drugstore, not for spending money as before, but now to support his wife. After graduation from high school, he entered Arizona State College at Tempe, where he studied for two

years during 1942 and 1943, during which time he worked at several other jobs besides the drugstore and was at times a civilian guard at Williams Field and with the help of his wife he operated a hamburger stand. In 1942, he enrolled at George Washington University in Washington, D. C., to complete his premedical training. Here their first child, Clifford James Junior, was born April 11, 1943. Arrangements were made through an old family friend, Senator Ernest McFarland, for him to secure night time employment in the Senate Post Office. On September 26, 1944, he was inducted into the Army of the United States. A daughter was born that fall. He received his basic training at Fort Ord, California, and was sent to Luzon Island in the Philippines. He spent three months on duty there, was returned home, and he spent the balance of his time as a surgical technician at Bushnell General Hospital at Brigham City, Utah, and at a Station Hospital in Fort Douglas, Utah. He was discharged from the Army with the rank of Sergeant, May 5, 1946.

He returned to re-enter George Washington University, work in the Senate Post Office, and he received his M.D. degree in 1951. He returned to Phoenix, interned at Good Samaritan Hospital, and here began an association with Dr. C. P. "Johnie" Johnston. Many long dichotomous arguments arose between these two about who really made the other a good physician. At any rate, they were both licensed to practice in the State of Arizona in 1952. He went immediately to Chandler and entered into practice in association with Dr. Von Pohle.

ROBERT CUMMARD

Clifford James Goodman, a physician and citizen, died of a coronary on March 28, 1962, a great loss to his community of Chandler and to me. As kids, Cliff and I fought each other daily from the day we were big enough to walk, but together we would happily take on anyone or group. Cliff never stopped fighting for what he thought was right. Cliff was more than just an M.D. He was truly a family doctor. Vic Swanson, a Phoenix banker, tells me about the time he was sick on his farm outside of Chandler, and called Cliff to make a house call late at night. Knowing that Vic was a bachelor, Cliff stopped at a grocery store and arrived at the house laden with all the food necessary for his sick patient for the next week.

As kids, Cliff and I listened to our grandfather, Dr. William Platt, tell stories of fighting Indians and epidemics in the early days of Arizona and we both resolved that some day we would be like Grandpa.

The practice of medicine is different now, but the feeling of people for their doctor is not much different, thanks to men like Cliff.

A church overflowing with people paying their last respects, a community almost at a standstill for one person's passing — these are the tributes we saw to the man and doctor Cliff was. He was a leader from the time we were kids to the day of his death. Student Body President, all-state athlete, Chief of Staff at Southside and Chandler hospitals, active in church affairs, Rotary Club president, president of the local school board and leader in community affairs. He was truly a good citizen and friend to the people as well as their physician.

RICHARD JOHNS, M.D.

Southside medicine suffered a cruel blow when Dr. Clifford Goodman of Chandler passed away suddenly on March 28, 1962. Dr. Goodman was a devoted man of medicine and a civic leader. He devoted much of his thought and time to his church and community.

Clifford Goodman was quiet, hard working, kind and unassuming. He was tolerant, slow to anger, and in some respects had acquired judgment and leadership found in men far beyond his years. He had the respect of his colleagues, the love of his patients and the thanks of his community.

Clifford was graduated from George Washington University School of Medicine, Washington, D. C., in 1951. He interned in Good Samaritan Hospital from July, 1951, to 1952. He became a member of the Southside Hospital Staff in 1952 and began his practice in Chandler with Dr. Lawrence Pohle. He was associated with Dr. Pohle for three years and this association was terminated when Dr. Pohle went into the United States Foreign Service as a career man. Dr. Goodman then began his practice solo and in a short time was working beyond the call of duty.

He was the type Longfellow had in mind when he wrote, "The heights by great men reached and kept were not obtained by sudden flight. But they, while their companions slept, were toiling upward in the night".

MELVIN L. KENT, M.D.

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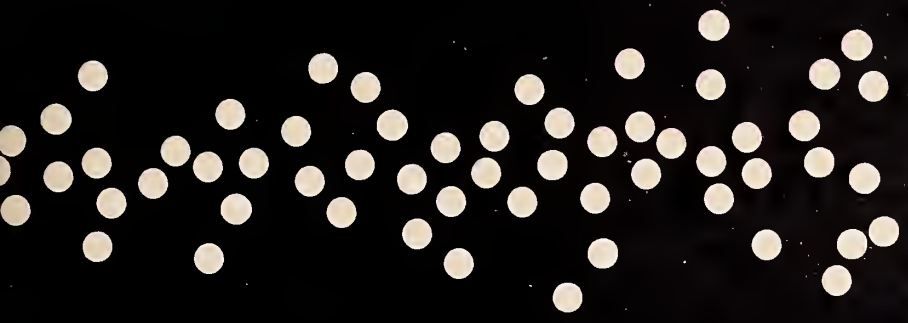
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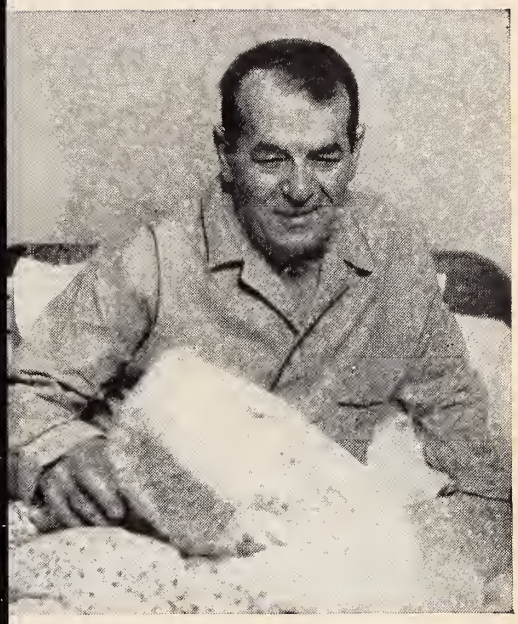


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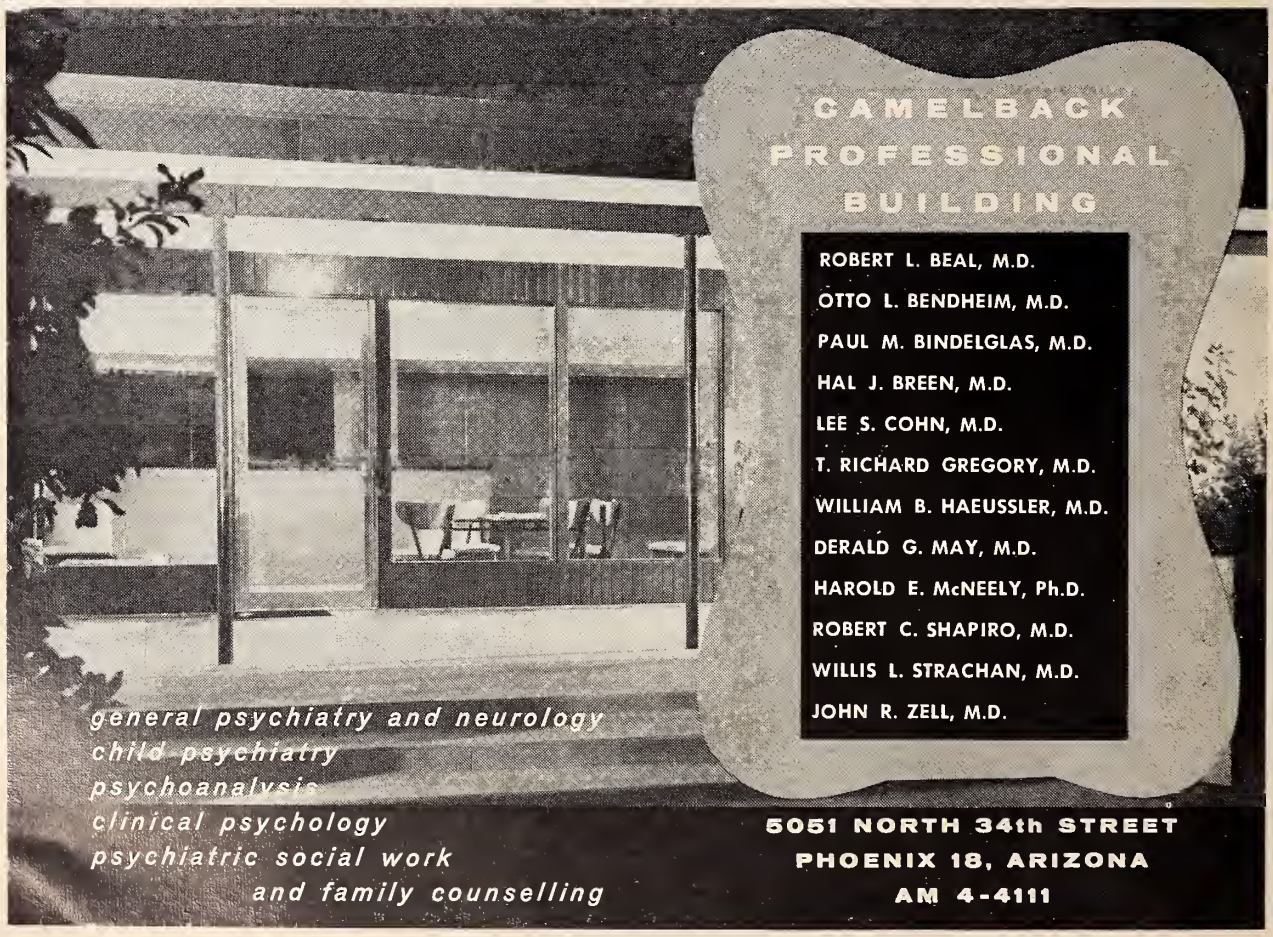
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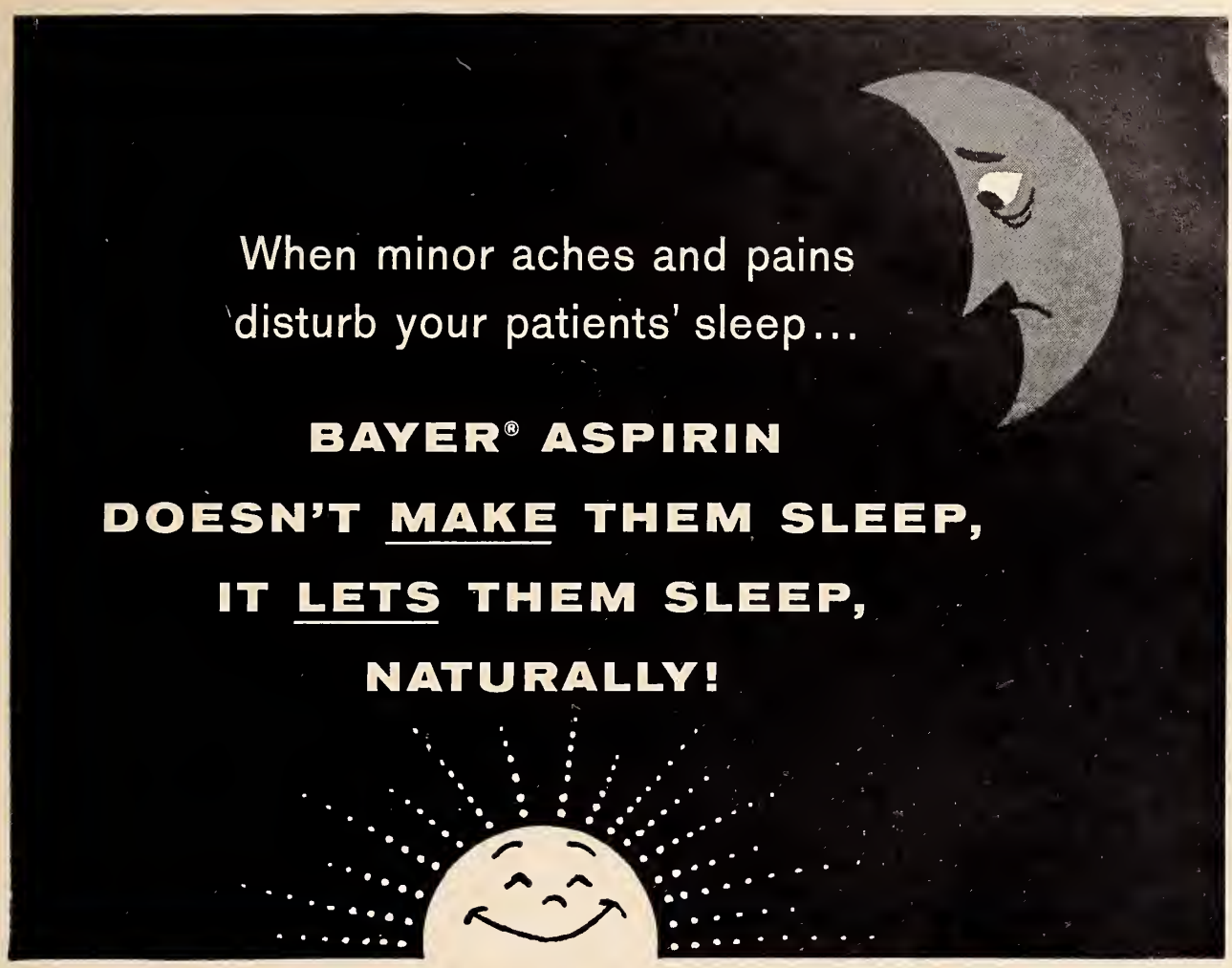


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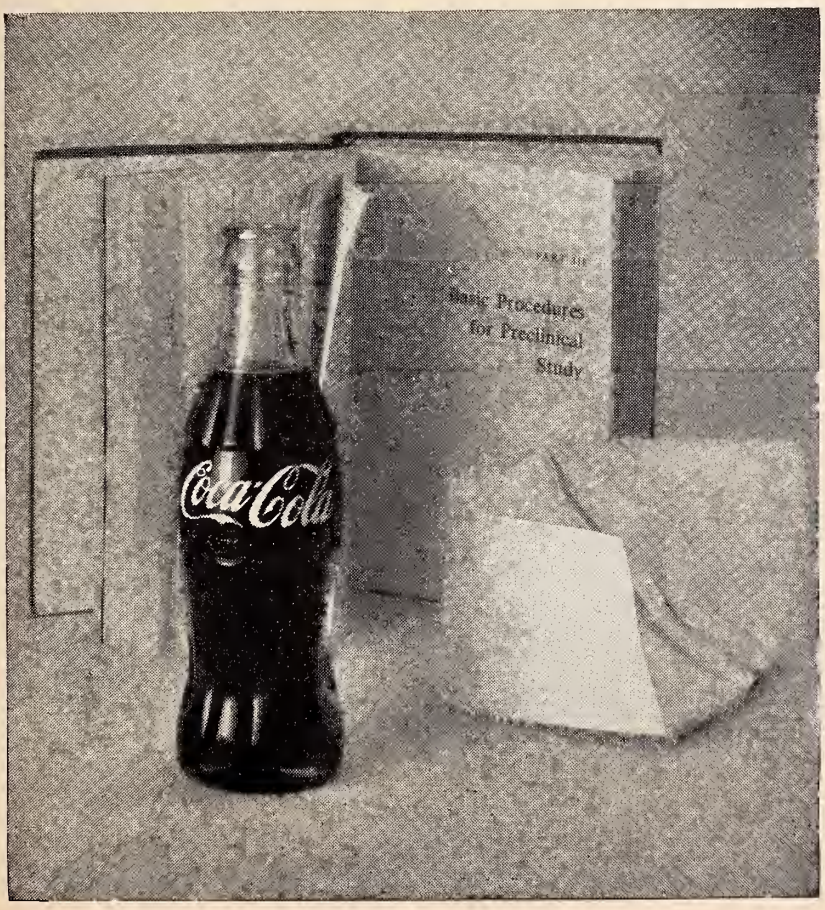
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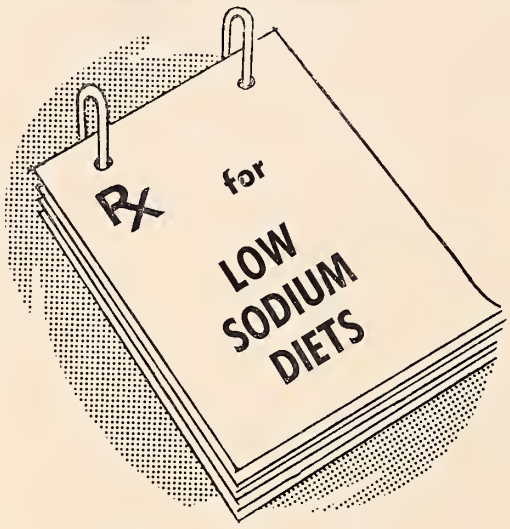
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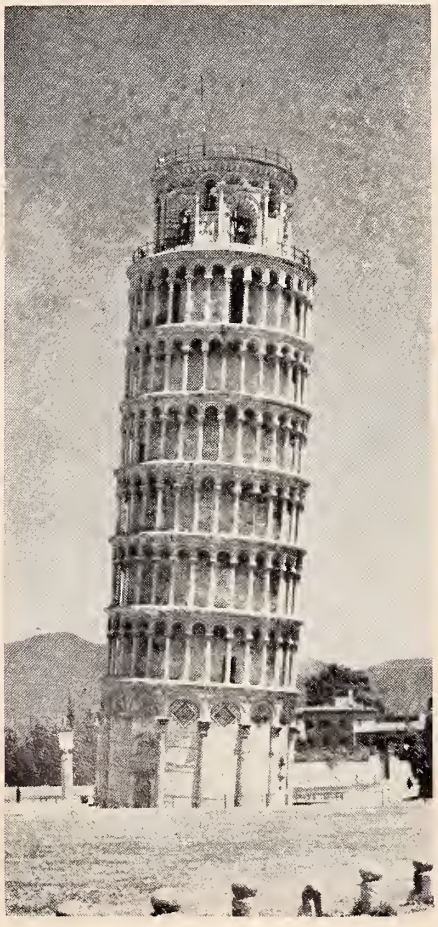
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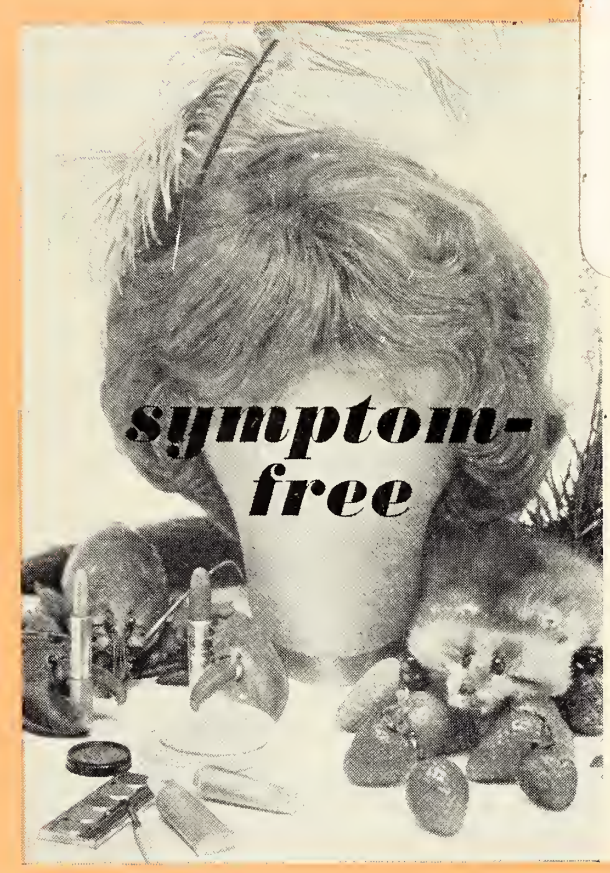
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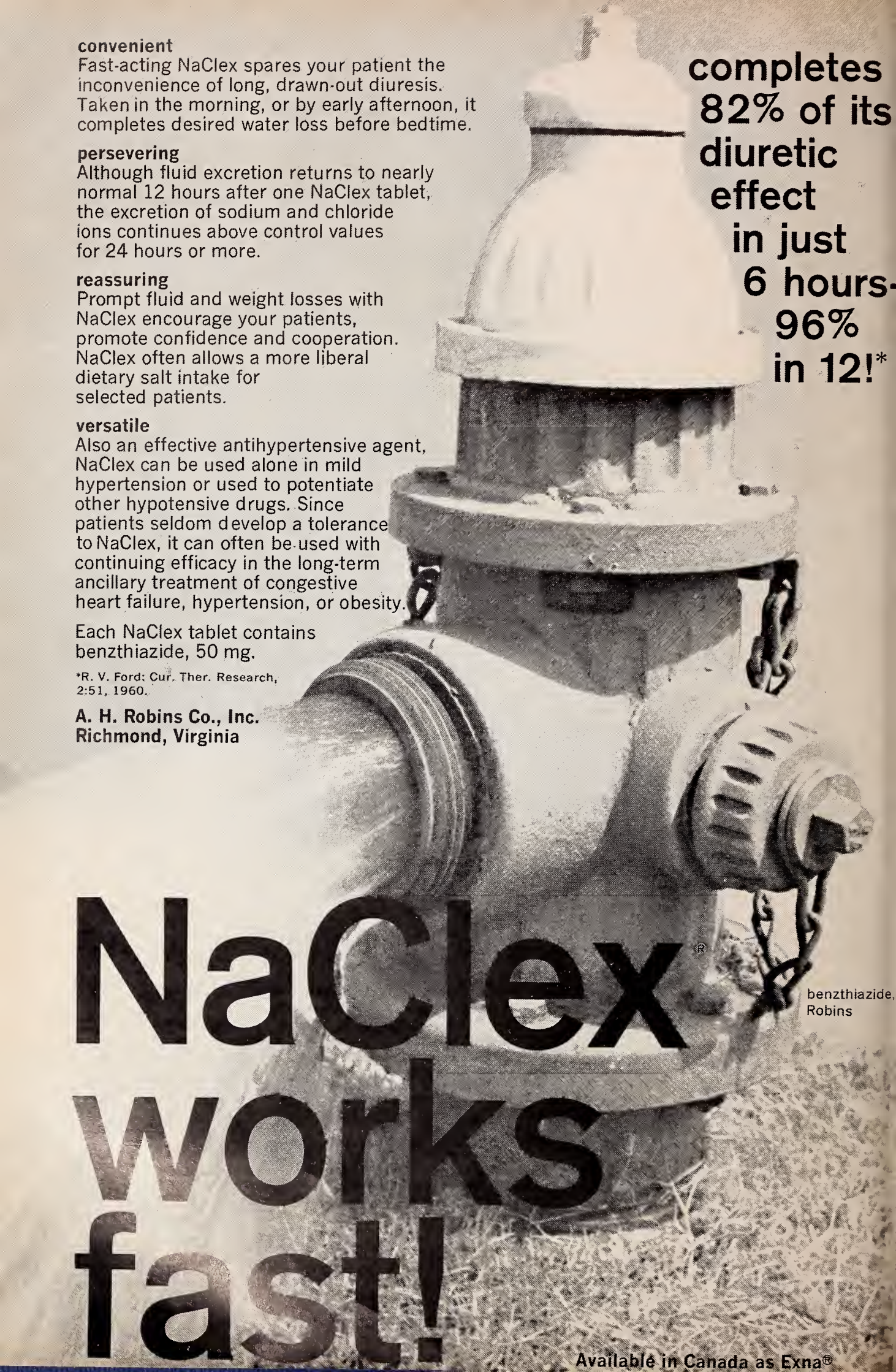
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MINUTES — MAY 27, 1962

Meeting of the Board of Directors, The Arizona Medical Association, Inc., Sunday, May 27, 1962:

AD HOC COMMITTEE FOR LIAISON WITH ARIZONA STATE INSURANCE COUNCIL

Joint Committee: Arizona Medical Association, Arizona Health Insurance Council, Arizona Hospital Association

Dr. John R. Schwartzman, Chairman of the Ad Hoc Committee for Liaison with Arizona State Insurance Council, reported on the Ad Hoc Committee's meeting with the Arizona Health Insurance Council and the Arizona Hospital Association which was held January 24, 1962, at the Hotel Westward Ho, Phoenix. Drs. Donald A. Polson and John J. Cogland were also present.

The purpose and aims of the Health Insurance Council were reviewed. It was pointed out that the primary objective of the Council's activity was to help perpetuate the voluntary system of medical care. It was indicated that there was an absolute need for close association and cooperation between the private insurance carriers, the hospitals, and the private practice of medicine. Results of the meeting were outlined as follows:

1. That there be a study and review of the H.I.C. standard forms for reporting illnesses and accidents.

2. That there be consideration of establishing review committees on perhaps a county level, particularly in Maricopa and Pima Counties. The committees would handle problems in health insurance that involve insurance company services, doctor's charges, hospital services and charges, and a mechanism for properly adjudicating proper fees and services questioned by one or the other party.

3. That there was an absolute need for an educational program for stating insurance, hospital and medical service referable to cooperative utilization of such a review committee, making available mechanisms whereby Grievance Committee action need not be invoked to settle differences.

4. That the Ad Hoc Committee be made a permanent committee for liaison and cooperation with the state insurance and hospital committees in the H.I.C.

In summary, the Ad Hoc Committee feels that there is much merit inherent in the desire of insurance and hospital groups to correlate with medicine, offering organized medicine a chance of directing its solution of problems with the other two groups in private practice as it embraces health insurance. It is strongly urged that the Association, through the Board of Directors, take action to implement the outlined results and to further coordinate efforts between the various groups as representative members of the Health Insurance Council.

It was moved by Dr. Steen, seconded by Dr. Jesse D. Hamer, and unanimously carried, that the Association accept the recommendations as set forth and that it establish permanent liaison (with the insurance companies and hospitals) with emphasis on developing review committees in Pima and Maricopa Counties, the heavily-populated counties, also that similar committees could be formed in the less populated, outlying counties or areas if they so desire, and further, that the Ad Hoc Committee continue as a liaison group.

As suggested by Dr. Clarence E. Yount, Jr., it was moved by Dr. Steen, seconded by Dr. Leslie B. Smith, and unanimously carried that the Ad Hoc Committee of Drs. Cogland, Polson and Schwartzmann be continued on a permanent basis. Dr. Schwartzman agreed to remain as chairman following appointment and Board approval for the continuation of the current committee for 1962-63.

COMMITTEE MEMBERSHIP APPOINTMENTS

Standing Committees were appointed as shown on listed page, ARMA Directory, Page 5.

CENTRAL OFFICE ADVISORY COMMITTEE

Financial Report, 1962 Annual Meeting

The Treasurer, Dr. Arthur V. Dudley, Jr., reviewed the receipts and expenditures of the 1962 annual meeting. Generally, most receipts having been received and expenditures made, the Association will realize an excess estimated to be approximately $1,500.

Budgetary Adjustments — 1962

Dr. Dudley reviewed in detail several budgeted items for which a revision appears to be necessary. Some items were overestimated, others underestimated.

The cost of legal counsel was discussed at length.

It was moved by Dr. Jarrett, seconded by Dr. Tuveson, and unanimously carried that the Association ask counsel for an estimate of legal costs for the remainder of the calendar year 1962 as applied to the drafting of the Medical Practice Act specifically, and for legal services in general, reminding counsel that the Association is prohibited by its by-laws from exceeding the approved budget for the year.

Relative to legal fees, it was noted that counsel had indicated that he was preparing a new contract based on a new procedure for arriving at legal fees for the Association.

House Resolutions Nos. 11 and 12

It was noted that the Reference Committee of the House of Delegates in the 1962 annual meeting referred Resolutions Nos. 11 and 12 to the Board of Directors for consideration, inasmuch as implementation would call for a considerable expenditure of monies not incorporated within the framework of the 1962 budget. These resolutions, by previous Board action, were referred to the Professional Committee for review and recommendation. No further action at this time is indicated.

INDUSTRIAL RELATIONS COMMITTEE

Guide for Permanent Disability Evaluation

Dr. Tuveson touched briefly upon the significance of the booklet, "Guide for Permanent Disability Evaluation," compiled by the North Carolina Medical Society in conjunction with the North Carolina Industrial Commission to the physicians of that state in rating permanent disability in workmen's compensation cases. Dr. Tuveson explained that he had forwarded it hoping that it might prove worthy of consideration by this Association's Industrial Relations Committee.

Regarding the booklet, a letter dated May 11, 1962 from Dr. John Ricker, Chairman of the Industrial Relations Committee, was read. In summary, he stated that the Committee felt ". . . that if something as definite as this guide were put into the fee schedule (of the State of Arizona), it would allow for little or no flexibility in determining disability ratings." Further, he wrote: ". . . general feeling is that our present method is satisfactory and should not be changed, at least not for the time being."

LEGISLATIVE COMMITTEE

H.R. 4222 — King-Anderson (87th Congress) — Report

Dr. Leslie B. Smith reported the overall progress made during the past months in the nationwide effort to defeat the King-Anderson measure. Although polls reveal a significant advance in feeling for medicine's stand, there appears to be a 50-50 chance, at present, of the bill's becoming law. Dr. Smith explained that many people had been reached through the Speaker's Bureau Resolutions Committee. He complimented the workers for their zeal and recommended that they be continued as a committee. The financial position of this Association's Speaker's Bureau Resolutions fund was reviewed, disclosing that although the donations from the membership had been significant, much remained to be done.

It was moved by Dr. Paul B. Jarrett, seconded by Dr. Dudley, and unanimously carried, that a letter be sent by the Board of Directors to the membership stressing that our records list the names of those who have contributed; that we have received a sum of $4,000; that we must continue our efforts to see this struggle to its conclusion; and strongly urging those who have not contributed to do so at once.

It was then moved by Dr. Hermann S. Rhu, seconded by Dr. Jarrett, and unanimously carried, that the Speaker's Bureau Resolutions Committee (Committee on National Legislation) be continued.

Further discussion disclosed that proponents of the King-Anderson bill might execute a maneuver whereby, if this bill appears to be losing ground getting out of the Ways and Means Committee, they might tack it onto some bill already in discussion in the form of an amendment.

It was moved by Dr. Robert A. Price, seconded by Dr. Jarrett, and unanimously carried that the Executive Committee be authorized to expend whatever monies it feels are necessary, but within the budget and within the income from the latest letter of appeal for funds.

It was moved by Dr. Leo L. Tuveson, seconded by Dr. Jarrett, and unanimously carried that we inform the press that, contrary to Presi-

dent Kennedy's statement that many doctors are in favor of the King-Anderson bill, that only one Arizona doctor is known to support the legislation and that the Arizona Medical Association, Inc., supports the American Medical Association in its opposition to the King-Anderson bill.

Santa Barbara County Medical Society (California) — Resolution (Support AMA "Bauer" Resolution)

The Bauer Resolution and a resolution initiated by the Santa Barbara County Medical Society of the State of California *("RESOLUTION OF NON-PARTICIPATION")* were read and briefly discussed. No action was taken.

Louisiana State Medical Society — Resolution (Opposing Socialized Medical Care)

A resolution, passed by the Louisiana State Medical Society (Opposing Socialized Medical Care) was read and discussed. No action was taken.

MEDICO-LEGAL COMMITTEE

Medical-Legal Panel — Report

A letter from Dr. Wallace A. Reed, Chairman of the Medico-Legal Committee, reporting the proceedings and results of a meeting of that committee held April 24, 1962, was read. The committee had met to consider the feasibility of adopting a modification of the so-called "Pima Plan" for state-wide use. The committee recommends to the Board that malpractice claims be considered by local grievance or existing panels if they are willing to accept them; further, that the idea of establishing a panel for settlement of malpractice claims on a state-wide basis be rejected at the present time.

The committee also recommended that items of mutual interest to lawyers and physicians be included in the program of the annual meeting of the Association, and that lawyers be invited to attend and participate in these sessions; further, that a similar arrangement be sought from the Bar Association, with the understanding that each Association would serve as host in alternate years.

It was moved by Dr. Rhu, seconded by Dr. Jarrett, and unanimously carried that the report of the Medico-Legal Committee be accepted.

SCIENTIFIC ASSEMBLY COMMITTEE

1962 Annual Meeting — Guest: Guillermo Soberanes, M.D. — Expenses

A letter from Dr. Soberanes was read in which he thanked the Association for having him as a guest at the 1962 Annual Meeting. Regarding expenses, Doctor Sobranes stated that there were no reimbursable items.

COMMUNICATIONS

AMA Candidate for Presidency

Copy of a letter written by Dr. Lindsay E. Beaton to Dr. Herman A. Dickel, of Portland, Oregon, was read. Dr. Dickel had requested support from Drs. Beaton and Hamer, ARMA's delegates to the AMA, for Dr. Raymond McKeown if he became a candidate for the presidency of the American Medical Association. Dr. Beaton's letter stated that he would be bound by any instructions from the Association (ARMA) and, therefore, could not give his support at this time. Dr. Hamer said that he, too, would be bound by the same instructions.

It was moved by Dr. Steen, seconded by Dr. Rhu, and unanimously carried, that ARMA continue its policy of not instructing its Delegates to the American Medical Association on the election of officers.

AMA Department of Medicine and Religion — Arizona Pilot State for Development of Program

Letter from the Rev. Dr. Paul B. McCleave, Director, Medicine and Religion, American Medical Association and Progress Report of the newly-formed department. Reverend McCleave stated his appreciation of Arizona's willingness to serve as one of the nine pilot states in developing the aims of the program. Pilot programs would be instituted in three county medical societies within the state. He further requested the Association's assistance in the following ways: 1. To establish a new committee or direct an existing committee to be responsible for activities of medicine and religion.

2. To request that that committee select three county societies in which trial programs may be developed in the fall of 1962.

a. Each county should represent different types, i.e., large-average-small, or industrial-rural-metropolitan, etc. b. If any county societies have done programming, it is suggested considering their selection as a pilot county. c. Each of the selected counties appoint a committee as being responsible for the program. d. The AMA office will work directly with the committee on these initial pilot programs.

It was moved by Dr. Dudley, seconded by Dr. Steen, and unanimously carried, that Dr. Secrist (Professional Liaison Committee) be ap-

pointed to form a subcommittee.

Missouri State Medical Association (Missouri) — Resolution (Council on Medical Education and Hospitals — Membership)

A resolution, adopted by the Missouri State Medical Association House of Delegates, dated March 19, 1962, was quoted as follows:

"Resolved, that the House of Delegates of the Missouri State Medical Association recommend to the Dclegates to the American Medical Association from Missouri that at the next annual session of the American Medical Association they introduce and support a resolution changing the membership of the Council on Medical Education and Hospitals so that no new university personnel be elected to the Council until a ratio of six non-university-connected members to four university or faculty practitioners is established and this ratio be maintained by any future elections to the Council . . . and that the House of Delegates of the AMA instruct the Council on Medical Education and Hospitals of its desires to perpetuate postgraduate programs of medical education in institutions not necessarily affiliated with medical schools so as to maintain a large degree of diversification in the field of postgraduate medical education."

It was moved by Dr. Leslie B. Smith, seconded by Dr. Rhu, and unanimously carried that this Association's Delegates to the AMA be instructed to favor the Missouri Resolution.

Arizona State Department of Health — Taped Heart Sounds — Diagnostic

A letter was read from Lloyd M. Farner, M.D., Commissioner of Arizona State Department of Health, relative to an attached reprint, entitled "The Detection of Heart Disease in Children — Results of a Mass Field Trial with Use of Tape-Recorded Heart Sounds." Dr. Farner forwarded this information suggesting the possibility of a plan for Arizona whereby a group of 10,000 school children could be checked in this manner as a demonstration and study. Further, he would appreciate consideration of the Association as to the value of such a demonstration for which a report of the project would be submitted.

It was moved by Dr. Steen, seconded by Dr. Jarrett, and unanimously carried, that this matter be referred to the Professional Committee for review and report.

Arizona State Department of Health — Detection of Glaucoma

Letter, dated May 23, 1962, from Dr. Lloyd Farner, Commissioner, Arizona State Department of Health, relating to his department's multi-screening program for the detection of glaucoma. Further, the Department of Health would like to re-establish the service in areas outside Phoenix, if approved by the Medical Association, as a component of the screening and referral program for detection of chronic diseases. A consultant's fee is expected to be provided by his department. The Department of Health is prepared to meet with representatives of the Association to establish a suitable plan for the project.

It was moved by Dr. Steen, seconded by Dr. Jarrett, and unanimously carried, that the matter of the detection of glaucoma be referred to the Professional Committee for review and report.

Woman's Auxiliary to The Arizona Medical Association— Mental Health Program

Letter dated May 24, 1962, from Mrs. Ian M. Chesser, Presiding Officer for the 32nd Annual Convention of the Woman's Auxiliary to The Arizona Medical Association, Inc., states the Auxiliary's declared intention of exploring the possibilities of expanding activities in the mental health field; further, they request wise counsel in this regard from the Arizona Medical Association, Inc. Mrs. Chesser requests that any reply be directed to Mrs. Frederick Knight, President.

It was moved by Dr. Steen, seconded by Dr. Jarrett, and unanimously carried, that this matter be referred to the Subcommittee on Mental Health of the Professional Committee.

Woman's Auxiliary to the Arizona Medical Association — Student Nurse Loan Fund — Expansion to Include Allied Careers

Letter dated May 22, 1962, from Mrs. Ian M. Chesser, Past President, Woman's Auxiliary to the Arizona Medical Association, Inc., states a recommendation arising from that organization's 32nd Annual Convention that the Student Nurse Loan Fund be opened to students of Allied Careers, pending approval of the Arizona Medical Association, standards for such loans to be set by the Loan Fund Committee; further, Mrs. Chesser states that they feel the financial condition of their Loan Fund is capable, at the present time, of expanding to include the aforesaid allied careers.

It was moved by Dr. Steen, seconded by Dr. Baldwin, and unanimously carried, that we accept the Woman's Auxiliary report and give them our blessing.

Arizona Hospital Association — Correlation of Outpatient Charges with Industrial Commission

Letter dated May 23, 1962, from Roland W. Wilpitz, President, Arizona Hospital Association, states The Arizona Hospital Association's desire to correlate its request for increase in outpatient charges to the Industrial Commission with the Arizona Medical Association. Also, it would appreciate notification of any contemplated change or requests that may go to the Commission from this organization in the near future.

It was moved by Dr. Jarrett, seconded by Dr. Tuveson, and unanimously carried, that the Board refer this matter to the Industrial Relations Committee for review and report.

Arizona Zoological Society — Zoological Park

Mrs. Robert E. Maytag, President, Arizona Zoological Society, in letter dated May 22, 1962, thanked the Association for considering the plans for the zoological park now under construction, expressing her disappointment at the lack of support or endorsement by this Association. She stated, further, that another year might provide "proof of the pudding" as to her organization's cause.

OTHER BUSINESS

AMA 1962 Annual Meeting — Designation Arizona Representation

As previously authorized, it was determined that the Association's two Delegates to the AMA, the Constitutional Secretary, the President-Elect, and the Executive Secretary attend the 1962 Annual Meeting of AMA, representing this Association at its expense.

Arizona AMPAC — Organization

The structure of the National AMPAC was discussed, with suggestions and recommendations emanating from the National AMPAC's headquarters as to desirable methods of forming an Arizona AMPAC. Three names were suggested as possibilities to serve as President, and Secretary-Treasurer, the two principal officers of a proposed State group; they are: Drs. Derrill B. Manley, W. Shaw McDaniel, and William E. Ragsdale, Jr.

It was moved by Dr. Leslie B. Smith, seconded by Dr. Jarrett, and unanimously carried, that the Board approve appointment of any of the three doctors suggested at the discretion of and appointment by our President.

It was moved by Dr. Leslie B. Smith that the Arizona Medical Association, Inc., offer a loan of $500 to the proposed Arizona AMPAC to help it defray initial expenses. The loan to be for a period of six months, subject to reconsideration at that time. The motion was seconded by Doctor Rhu and carried.

Highway "66" Accident Investigation Program — Inspecting Stations

Dr. Jarrett moved, Dr. Leslie B. Smith seconded, that relative to the Highway "66" program for the establishment of inspection stations and the investigation of accidents, which is going to be instituted beginning June 15, 1962 and at the reguest of the Superintendent of the Arizona Highway Patrol, this Association endorse this program as a permanent action. Carried unanimously.

CHARLES E. HENDERSON, M.D.
Secretary

HOUSE OF DELEGATES RESUME'

Meeting of the House of Delegates of The Arizona Medical Association, Inc., held in the Convention Center of the Safari Hotel, Scottsdale, Arizona, Friday, April 27, 1962, Paul B. Jarrett, M.D., Speaker of the House, presiding.

ELECTION OF OFFICERS

The following officers were elected for a term of one year:

President-elect, William B. Steen, M.D.; Vice President, W. Albert Brewer, M.D.; Secretary, Charles E. Henderson, M.D.; Treasurer, Arthur V. Dudley Jr., M.D.; Speaker of the House, Paul B. Jarrett, M.D.; Editor-in-Chief, Darwin W. Neubauer, M.D.; Delegate to AMA, Lindsay E. Beaton, M.D. (1963-64), and Alternate Delegate to AMA, Arnold H. Dysterheft, M.D. (1963-64).

REFERENCE COMMITTEE ON AMENDMENTS

There was no report of the Reference Committee on Amendments as no amendments were presented.

REFERENCE COMMITTEE ON RESOLUTIONS

Report of the Reference Committee on Resolutions as deleted and amended was adopted with the following actions taken on motions regularly made and carried.

1. Ambulatory Treatment Plans, Follow-up

Treatment, Civil Commitment of Drug Addicts, Rehabilitation and Dissemination of Factual Information on Narcotic Addiction.

WHEREAS, the American Medical Association and the American Bar Association have had committees studying the problem of narcotic drug addiction, and

WHEREAS, successful and humane *withdrawal* of individuals addicted to narcotics in the United States necessitates constant control under conditions affording a drug free environment, and always requires close medical supervision, and

WHEREAS, the successful treatment of narcotic addicts in the United States requires extensive post-withdrawal rehabilitation and other therapeutic services,

BE IT RESOLVED, that the Arizona Medical Association expresses the opinion that maintenance of stable dosage levels in individuals addicted to narcotics is generally inadequate and medically unsound and that ambulatory clinic plans for the withdrawal of narcotics from addicts are likewise generally inadequate and medically unsound, and

BE IT FURTHER RESOLVED, that the Arizona Medical Association delegates to the American Medical Association be instructed

(a) to oppose the development of such ambulatory treatment plans, and

(b) to support

(1) after complete withdrawal, follow-up tretatment, including that available at rehabilitation centers,

(2) measures designed to permit the compulsory civil commitment of drug addicts for treatment in a drug free environment,

(3) the advancement of methods and measures towards rehabilitation of the addict under continuing civil commitment, and

(4) the establishment of methods for the dissemination of factual information on narcotic addiction to the members of the medical profession.

The Reference Committee recommended that no action be taken on Resolution No. 1, in that a resolution relative to the narcotic problem has been adopted by the United States Bureau of Naroctics, the National Research Council and the Council on Mental Health of the American Medical Association. This resolution will be released within two weeks and will be much more acceptable to the medical profession.

This portion of the Committee's report was adopted.

2. Annual Membership Dues

WHEREAS, more demands are being placed on the Arizona Medical Association to represent the individual doctors on a State and National Legislative basis, and

WHEREAS, without this representation, the doctors of medicine may lose the close doctor-patient relationship which now exists through the gradual and insidious socialization of medicine, and

WHEREAS, due to the increased cost of doing business in the last several years and the additional demands placed upon the Association by the Board of Medical Examiners, and

WHEREAS, in the past nine months, the Association suffered a net decrease in cash position of $76,364.04, and under the present new structure can expect a total decrease of cash position in the period from April 1, 1961 to the period of December 31, 1962 of $81,896.04, and

WHEREAS, Henry and Horne, Certified Public Accountants, have advised the Association that we are in a precarious position as a result of loss of reserve capital,

THEREFORE BE IT RESOLVED, that the dues of the Arizona Medical Association be raised to $125 per year; $110 to be allocated to the General Fund and $5.00 to Arizona Medicine, and the remaining $10 to AMEF, or Student Loan Fund, or other charities as determined by the House of Delegates.

The Reference Committee recommended that the dues for 1963 be set at $105 per active member. It also recommended that the proposed budget be referred to the Board of Directors for review and that the board reduce various appropriations in the budget by ten per cent or more wherever it may deem practical. The report of the Reference Committee was further amended, that the $10 per member contribution to AMEF during the calendar year 1962 revert to the general fund of the Association and not be paid to AMEF.

It was moved and carried that the report of the committee as amended be adopted.

3. American Medical Association Representative of Practicing Physicians of this Country

WHEREAS, there have been within recent months many statements circulated in the lay press to the effect that the American Medical

Association does not represent the majority of practicing physicians in this country in certain of its public stands, and

WHEREAS, the American Medical Association is by its very structure a representative democratic organization in which physicians at the local level select trusted representatives to vote their opinions in the House of Delegates of the American Medical Association, so that the American Medical Association is in essence the body of the practicing physicians of this country, and

WHEREAS, decisions made by the House of Delegates of the American Medical Association in this democratic fashion obviously represent the majority opinion of United States medicine just as decisions made by the Senate and the House of Representatives of the United States Congress represent the majority opinion of the people of the United States, now therefore be it

RESOLVED, that the Arizona medical association go on record at the time of its 1962 annual meeting, when public press reports of its proceedings will be widely distributed, to publicize the fact that the American Medical Association is the democratically representational national body of the practicing physicians of this country, and be it further

RESOLVED, that this Resolution be circulated to the other state medical associations so that they may in turn be encouraged to make similar public statements, and be it further.

RESOLVED, that the physicians of Arizona be again encouraged, by letter from the president of the association, to engage more vigorously in the affairs of their local county medical societies and in the affairs of the state medical association, so that they may have a voice in the formation of medical policy within the State and may be sure that their opinions are added to the collective wisdom which instructs their delegates to the American Medical Association in the proper representation of the stands and interests of Arizona medicine on the national scene.

It was regularly moved and carried that this resolution be adopted.

4. Retention of Membership Jurisdiction within the Constituent and Component Levels

WHEREAS, the report of the Medical Disciplinary Committee of the American Medical Association to the Board of Trustees of that Association dated June, 1961 proposed that the American Medical Association, under certain circumstances, be empowered to remove from membership a physician alleged to have transgressed the ethical and professional standards of the American Medical Association, without such action first being recommended by the physician's state medical association, and

WHEREAS, although this recommendation of the Medical Disciplinary Committee was disapproved by the House of Delegates of the American Medical Association during the Denver meeting in December, 1961, it may well be brought back for reconsideration, and

WHEREAS, The Arizona Medical Association finds that this is a drastic cure for an illness that it considers minor, in that it does not believe that there is now malpractice of such an extent to necessitate such a major change in the representative structure of American medicine, now therefore be it

RESOLVED, that The Arizona Medical Association place itself directly on record as disapproving any action which would allow the determination of state society membership to be made by any body other than the state society itself, except that the Judicial Council of the American Medical Association should have appellate jurisdiction, and final jurisdiction in cases of dispute, and be it further

RESOLVED, that this stand of The Arizona Medical Association be transmitted to the Board of Trustees of the American Medical Association and to the Judicial Council of the American Medical Association, and be it further

RESOLVED, that the delegates of The Arizona Medical Association to the House of Delegates of the American Medical Association be instructed to oppose in every possible way the passage of any motion in the future that might remove from the state associations the power to determine their own memberships.

It was regularly moved and carried that this resolution be adopted.

5. Recommended Study for the Orderly Realignment of Blue Shield to Provide Payment for all Medical Services of Patients in Arizona, including Pathology, Radiology and Anesthesia

WHEREAS, the proposed King-Anderson legislation includes pathology, radiology and anesthesia as hospital services, and

WHEREAS, the national Blue Shield plan has included these services in its new program for provision of medical care for the aged, and

WHEREAS, the Arizona Blue Shield is a corporation operated by physicians for the provision of medical care for the people of Arizona, and

WHEREAS, although it is desirable to include all hospital services under Blue Cross, all medical services should properly be provided under the Blue Shield program in conformity with the National Blue Shield Plans, and

WHEREAS, at the present time, this is not being done in Arizona by Blue Cross and Blue Shield,

THEREFORE BE IT RESOLVED, that the House of Delegates authorize the president of the Arizona Medical Association to appoint an ad hoc committee to study this situation and make recommendations for the orderly realignment of Blue Shield to include payment for pathology, radiology and anesthesia services of patients in Arizona, and

BE IT FURTHER RESOLVED, that the Arizona Hospital Association be invited to appoint a similar committee to meet and discuss this problem with an ad hoc committee from The Arizona Medical Association.

The Reference Committee recommends that the ad hoc committee report to the Board of Directors from time to time, relative to progress made in the study, together with its recommendations.

It was regularly moved and carried that this resolution be adopted.

6. Proposal for Enactment of Professional Corporation Legislation

WHEREAS, a number of states have passed enabling legislation to allow doctors, dentists, lawyers, and other self-employed to set up limited corporations and thereby to take advantage of the many tax benefits which at present can accrue only to members of corporations, and

WHEREAS, it is doubtful or questionable that the Keogh Bill will ever pass the United States Congress without a lot of deleterious features.

THEREFORE BE IT RESOLVED, that The Arizona Medical Association initiate the steps required to have such enabling legislation to be passed in the State of Arizona at the next session of the State legislature with or without the help and cooperation of the other self-employed organizations such as the Arizona Dental Association, or the Arizona Bar Association, this resolution to incorporate all safeguards as outlined in Model Legislation drawn up by the AMA, and

BE IT FURTHER RESOLVED, that The Arizona Medical Association assess each member on a pro rata basis to defer the cost of initiating such legislation.

The Reference Committee having been informed that a Professional Corporation Act is already a part of Arizona Statutes, recommended that no action be taken.

This portion of the committee's report was adopted.

7. Commendation of the American Medical Association and the National Association of Blue Shield Plans for the Development of the Blue Shield National Senior Citizen Program and Recommended Participation in the Blue Shield Plan of Arizona

WHEREAS, the medical care needs of senior citizens are the proper concern of all members of the community, and

WHEREAS, these needs can most properly be met by means of existing voluntary prepayment methods adjusted to the limited means of elderly citizens, and

WHEREAS, the medical profession, by virtue of the traditions of community service to which it is dedicated, desires especially to help make possible an effective program to enable senior citizens to finance the cost of medical care on their own initiative, and

WHEREAS, the medical profession has demonstrated an interest of long standing in the medical care needs and financial status of senior citizens, and

WHEREAS, the medical profession recognizes that methods to help senior citizens finance the cost of needed medical services must be extended beyond the scope of all present existing programs, now

THEREFORE BE IT RESOLVED, that The Arizona Medical Association commends the American Medical Association and the National Association of Blue Shield Plans for the development of the Blue Shield National Senior Citizen Program, and

BE IT FURTHER RESOLVED, that the members of The Arizona Medical Association do hereby indicate their unqualified support of this effort and signify their intention to participate in the Blue Shield Plan of Arizona.

It was regularly moved and carried that this

resolution be adopted.

8. AMEF Contributions and Student Loan Fund Program.

WHEREAS, the House of Delegates of The Arizona Medical Association, Inc. in meeting held April 26, 1956, did create from a portion of the Medical Defense Fund totalling $43,105 a Benevolent and Loan Fund for assistance to worthy young residents of Arizona who desire to secure a medical education, and

WHEREAS, such funds have been depleted to a low ebb of $9,231.11 through the granting of twenty-five loans in accordance with approved requirements, and

WHEREAS, the House of Delegates did also on April 26, 1956 assesss each dues paying member of The Arizona Medical Association, Inc. $10.00 per annum, a contribution to the American Medical Education Foundation, and

WHEREAS, the need for worthy qualified Arizona resident medical students has greatly increased over recent years and the need therefor being urgent, now therefore be it

RESOLVED, that this House of Delegates of The Arizona Medical Association, Inc. authorize that fifty per cent of the current AMEF contributions be retained by the Association for the specific use of the loan fund for a total of five years certain, and be it further

RESOLVED, that the Benevolent and Loan Fund Committee continue the study of financial assistance to Arizona resident medical students, utilizing whatever means may be available, particularly through AMA, for the retention of this valuable and worthy program.

The Reference Committee recommends that this resolution be not adopted and further recommends that the House of Delegates discontinue completely the assessment of $10.00 per member for AMEF.

This portion of the committee's report was adopted.

9. Hospital Staff Committees' Deliberations—Privileged Communications

WHEREAS, the hospital staff committees in the course of their medical studies do perform invaluable services for the purpose of reducing morbidity and mortality and for maintaining high standards of medical professional care, and

WHEREAS, these proceedings of medical staff committees and the eventual actions of the hospital medical staffs do result in rigid self-discipline of the staff members in maintaining these high professional standards, and

WHEREAS, threats of legal counter action against members of the professional staffs of the hospital or against the members of the staff committees may serve as a real deterrent in the efficient work of these groups, and

WHEREAS, material, information, findings and conclusions of the deliberations of such authorized groups rightfully shall be privileged communications which should not be used or offered or received in evidence in any legal proceedings, and

WHEREAS, The Arizona Medical Association, Inc. is dedicated to the maintenance of the highest standards of professional medical standards as established by the By-Laws and the Code of Ethics,

THEREFORE BE IT RESOLVED, that The Arizona Medical Association, Inc. duly convened on April 25 through April 28, 1962, does affirm and approve these principles of procedures of hospital staffs and hospital staff committees, and

BE IT FURTHER RESOLVED, that the House of Delegates of The Arizona Medical Association, Inc. instruct the Legislative Committee of this Association to study and recommend proper legislative proposals for a bill for enactment by the House and the Senate of the State of Arizona.

The Reference Committee noted for the information of the House that this resolution would undoubtedly call for the assistance of legal counsel.

It was regularly moved and carried that this resolution be adopted.

10. Legislative Procedures

WHEREAS, it was recognized by the founders of the American Medical Association, May 7, 1847, that it was proper and essential for doctors and their organization to actively promote legislation which would improve the quality and the quantity of medical care, and

WHEREAS, the continued legislative activities of the medical profession have been an essential force in the advancement of medicine and the improvement of the public health, and

WHEREAS, the increased socio-political character of medicine and the threat of the invasion of the practice of medicine by government demands an even more effective political alertness, and

WHEREAS, the By-Laws of The Arizona

Medical Association have recognized our legislative duties "securing and enforcing legislation in the interest of public health and of scientific medicine, and in preventing the passage of, or securing the repeal of legislation contrary to those interests", and

WHEREAS, legislative problems frequently demand almost immediate decisions and action which cannot be effectively processed by our present customs and rules such as "subject to the approval of the Board", and

WHEREAS, some of these cumbersome and staid procedures deter the fulfillment of our accepted legislative functions,

THEREFORE BE IT RESOLVED, that the By-Laws Committee, after consultation with the Legislative Committee, the Executive Committee and such other persons as they deem necessary, make a study of our legislative activities and recommend changes in the By-Laws which will provide for a more effective legislative functioning, and

BE IT FURTHER RESOLVED, that a study be made of the cost of our legislative activities in view of determining a realistic budget.

It was regularly moved and carried that this resolution be adopted.

11. Civil Defense Training Programs

WHEREAS, in the event of a civil defense or disaster emergency many lay persons will be needed to provide medical care and public health services, and

WHEREAS, lay persons need pre-emergency training,

NOW THEREFORE BE IT RESOLVED, that the House of Delegates of The Arizona Medical Association authorizes and directs the Civil Defense and Disaster Subcommittee to designate appropriate training programs, and

BE IT FURTHER RESOLVED, that training be accomplished by each county medical society in cooperation with the civil defense district, county or municipal medical chiefs designated as Civil Defense Disaster Coordinators. The subcommittee is to render all possible assistance in the implementation of the program.

12. Civil Defense Traning Programs

WHEREAS, Annex "H" of the Arizona Survival Plan (54 pages and 8 appendices) covers the health and medical services, organization and responsibilities, pre-attack planning, training and assignments and the post-attack implementation of the program to provide the best possible medical care, effective public health services and adequate medical supplies,

THEREFORE BE IT RESOLVED, that The Arizona Medical Association give full support to the Subcommitee on Civil Defense and Safety in its efforts to develop and coordinate an effective statewide program as recommended by the American Medical Association and that it authorizes and directs the subcommittee to contact directly the component county medical societies of the six Arizona medical association districts and physicians designated to direct the program at the district, county and local levels, and

BE IT FURTHER RESOLVED, that the Subcommittee on Civil Defense and Safety of The Arizona Medical Association be delegated the responsibility to implement this resolution and to report annually to the House of Delegates.

The Reference Committee, recognizing implementation of Resolutions 11 and 12 would call for considerable expenditures not incorporated in the framework of the proposed 1963 budget, recommended that no action be taken on these resolutions and that they be referred to the Board of Directors for its action.

This portion of the Committee's report was adopted.

THE REPORT OF THE REFERENCE COMMITTEE AS A WHOLE, AS DELETED AND AMENDED, WAS ADOPTED.

ELECTION OF DISTRICT DIRECTORS

The following District Directors were elected.

Central District, Robert A. Price, M.D. (1962-65); Central District, Ashton B. Taylor, M.D. (1962-63); Southeastern District, Thomas W. Jensen, M.D. (1962-65); Southern District, Earl R. Baldwin, M.D. (1962-65); Southern District, Hermann S. Rhu, M.D. (1962-64); Southwestern District, Howard W. Finke, M.D. (1962-65).

AMA FIELD REPRESENTATIVE

Dick Philleo, Field Representative, AMA, addressed the House and extended his thanks for the opportunity to be present, He responded to questions from the floor regarding national legislative activities.

1963 ANNUAL MEETING

It was moved and carried that the next annual meeting of this Association be held in Tucson in 1963.

MEETING ADJOURNED.

Paul L. Singer, M.D.,
Secretary



makes glaucoma screening easier

"Since approximately 3 to 4 per cent of those patients in the forty-and-over age group may have glaucoma, the value of a routine measurement of the intraocular pressure is self-evident."[1]

Screening tonometry for early detection of glaucoma can be incorporated conveniently into any physical examination procedure when the eye is anesthetized with OPHTHAINE, the topical anesthetic with the shortest onset time. Instillation of 1 or 2 drops produces adequate anesthesia in approximately 20 seconds or less.[2,3] OPHTHAINE anesthesia is completely safe, because the drug does not damage the corneal epithelium and seems to be less irritating than other agents.[4,5,6] The duration of anesthesia (about 15 minutes) is adequate for removal of foreign bodies and similar operative procedures. In fact, the properties of OPHTHAINE make it ideal for any ophthalmologic procedure requiring topical anesthesia.

SUPPLY: Ophthaine is supplied as a sterile 0.5% solution in plastic drop-dispensing bottles containing 15 cubic centimeters. REFERENCES: 1. Gordon, D.M.: *New York J. Med.* 61:3649 (Nov. 1) 1961. 2. McIntyre, A.R.; Lee, L.W.; Rasmussen, J. A.; Kuppinger, J.C., and Sievers, R.F.: *Nebraska State M.J.* 35:100 (Apr.) 1950. 3. Boozan, C.W., and Cohen, I.J.: *Am. J. Ophthal.* 36:1619 (Nov.) 1953. 4. Jervey, J.W.: *South M.J.* 48:770 (July) 1955. 5. Leopold, I.H.: in Modell, W.: Drugs of Choice, 1960-1961, St. Louis, C.V. Mosby Co., 1960, page 699. 6. Linn, J.G., Jr., and Vey, E.K.: *Am. J. Ophthal.* 40:697 (Nov.) 1955

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SQUIBB PROPARACAINE HYDROCHLORIDE

blood pressure approaches normal more readily, more safely....simply with Salutensin®

(hydroflumethiazide, reserpine, protoveratrine A—antihypertensive formulation)

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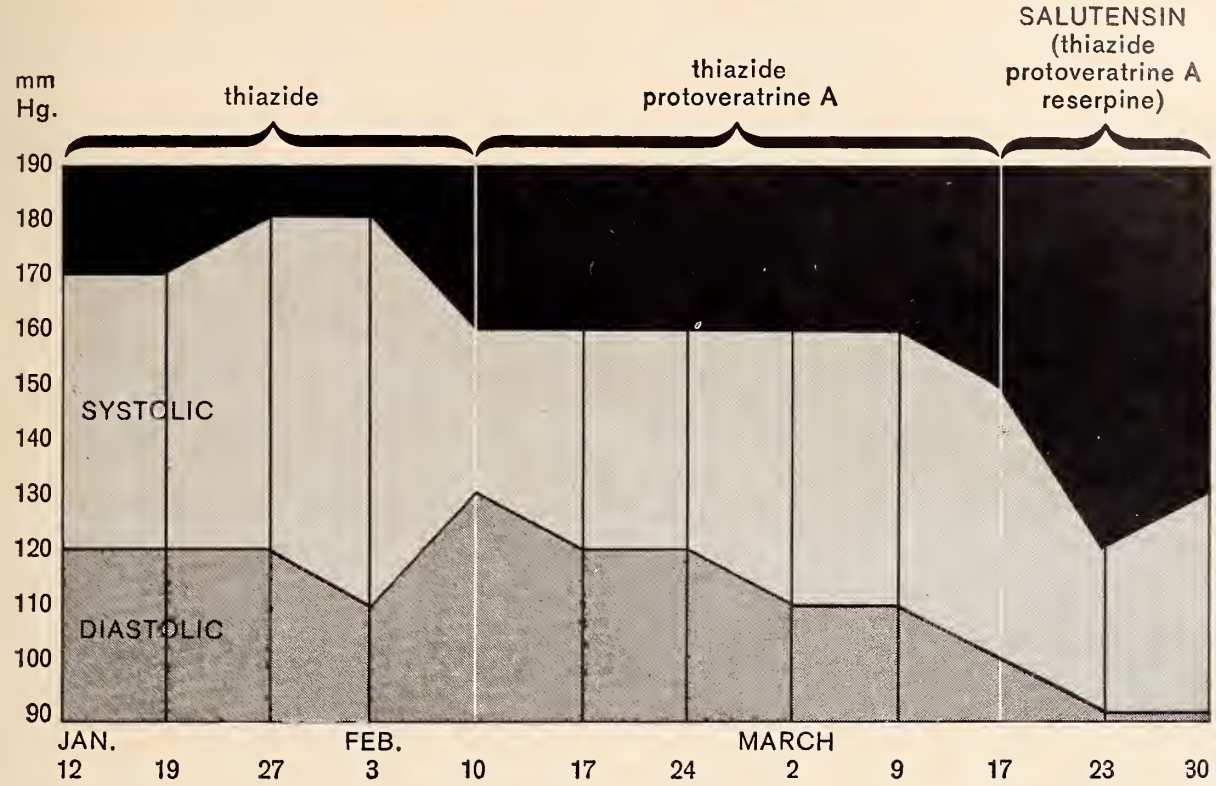
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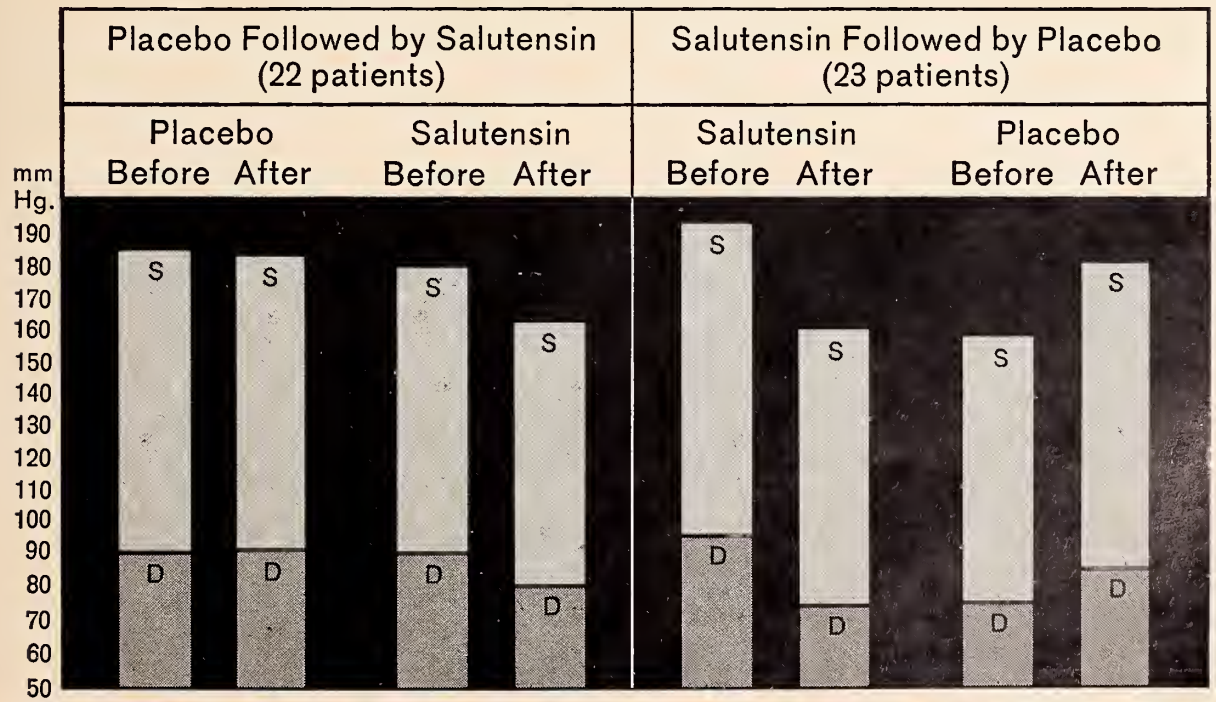
11 WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS BY SERIAL ADDITION OF THE INGREDIENTS IN SALUTENSIN IN A TEST CASE

(Adapted from Spiotta, E. J.: Report to Department of Clinical Investigation, Bristol Laboratories)



3½ WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS USING SALUTENSIN FROM THE START OF THERAPY IN A "DOUBLE BLIND" CROSSOVER STUDY

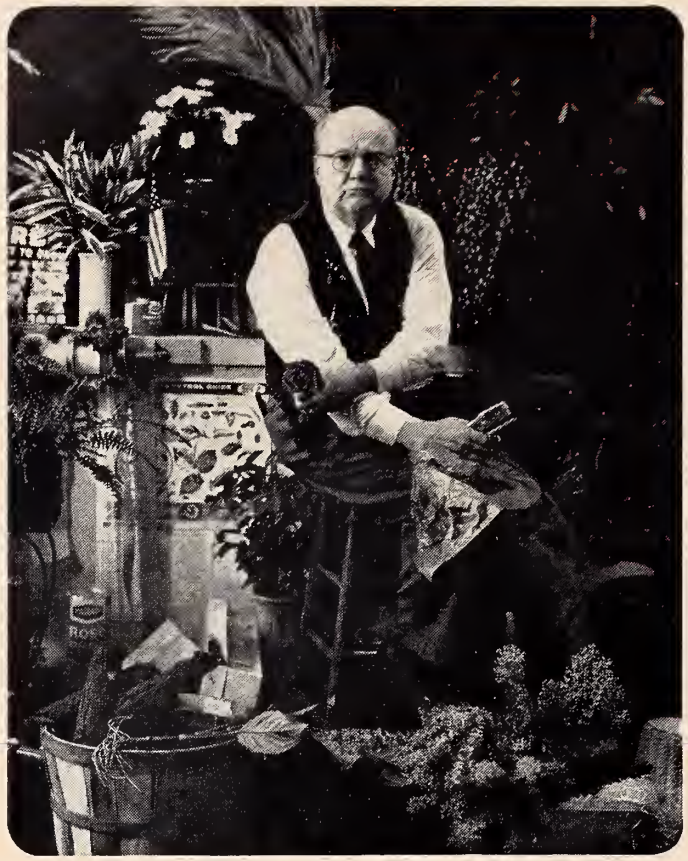
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The Endocrine Glands and Aging

Edward H. Rynearson, M.D.

An entertaining and practical paper dealing with the problems of aging as related to hormonal functions, and in particular relating to the administration of hormones to try to correct many of the problems seen with aged patients. This paper is an honest appraisal of the ineffective attempts by physicians to alter or actually change the complex physiological alterations accompanying the aging process.

The title assigned to me for this program reads, "What Is Growing Old?" I doubt that anyone will have the answer to this question at the end of the entire seminar, let alone at the conclusion of this, the first presentation. I should like to limit my discussion to the facets that have been the main subjects of my interest for somewhat more than 30 years; namely, endocrinology and metabolism. Dempsey(1) begins his chapter on the "Homeostatic and Histochemical Aspects of the Endocrine Glands" (in Cowdry's *Problems of Aging*) with the following statements:

"The subject of endocrinology is commonly regarded as beginning with the lecture of Brown-Sequard before the French Academy of Medicine in 1889. On this occasion, the aged and venerable doctor described how, after self-injection with a testicular extract, the infirmities of age had fallen away and a physiological rejuvenation had taken place. Thus, endocrinology was born as an example of gerontotherapy. It is not surprising, therefore, that students of aging have constantly kept an eye upon the expanding field of endocrinology, nor that endocrinologists have hoped to find the fountain of youth among the myriad extracts and preparations containing the ever more active principles of the endocrine glands. This search, however, like Ponce de Leon's, has proved fruitless. It appears, from our expanding knowledge, that many processes are altered during physiological aging, and that restitution of the hormonal balance characteristic of youth may merely restore one of a set of altered mechanisms. Nevertheless, something may be gained by substitution therapy. An old automobile's performance may be improved by a new carburetor. In any event, study of the endocrine changes associated with aging can lead only to accurate knowledge without which no rational therapy, gerontological or other, can be conceived.

"The literature of endocrinology abounds with references to postulated associations between endocrine status and aging. To date, these postulations have not proved too helpful. Some improvement can be noted in aged people to whom the sex hormones are administered, but equal improvement usually follows psychological counselling or social rehabilitation. It now appears that the endocrine alterations associated with aging are complex rather than simple. The capacity of the endocrine system to engage in a shifting balance and its capacity to respond to stress seem to be of more importance in aging than is any single deficiency."

GLANDS AND YOUTH

As a matter of fact, as long as there has been

Read at the Symposium on Medical and Surgical Problems in Old Folks sponsored by the Arizona Academy of General Practice and the Maricopa County Medical Society, Phoenix, Arizona, March 18, 1961.

Section of Medicine, Mayo Clinic and Mayo Foundation, Rochester, Minnesota.

recorded history — thousands of years before Ponce de Leon — there are records of man's conviction that youth is associated with the endocrine glands (that is, the gonads); and the activity of the goat in spring became the symbol of vitality and rejuvenation. It is not surprising that Brinckley, the late quack, should have followed in the footsteps of mythology, history, and "scientific medicine" in suggesting the transplantation of the testicles of goats and monkeys for the purpose of rejuvenating aging men. Today we are being informed from many sources that one of the reasons for the greater longevity of women is the superiority of their gonads, and it has been suggested that if men care to live longer they might submit to castration or to the administration, indefinitely, of estrogenic hormones. There has been a notable lack of response to these suggestions, a certain number of men believing that if they are to be castrated, asked to give up good food, and made to forego the pleasure of a cocktail before dinner or a cigar after dinner, there really wouldn't be too much left in life worth living for. This sentence is exaggerated and facetious — and yet may contain some truth (although honesty compels the author to say that he believes enough in some of this advice that he has given up the ingestion of saturated fats and all forms of smoking; however, he shows no inclination to surrender the remaining activities).

In addition to Cowdry's book, physicians are referred to Stieglitz's(2) volume on *Geriatric Medicine;* to the publications of various symposia and conferences, one of which is the *Conference on Problems of Aging* of the Josiah Macy, Jr., Foundation; and of course to the many articles that appear in the *Proceedings of the American Geriatrics Society.* More recent references to the literature are abstracted in *Excerpta Medica* in the section "Gerontology and Geriatrics."

All physicians will acknowledge that there are changes in the glands of internal secretion with aging (some of which may be welcome). In addition to Dempsey's(1) contribution, several other chapters in Cowdry's book deal with the glands of internal secretion, such as a chapter on the thyroid, pancreas, parathyroids, adrenals, thymus, and pituitary, by Carlson(3); a chapter on the cytologic changes in the cells of the glands of internal secretion, by Payne(4); one on changes in the female reproductive system, by Masters,(5) and chapters on the male secondary sexual organs, by Moore,(6) and reproductive system, by Engle(7). Anyone who knew Dr. Carlson will have no difficulty remembering the great emphasis he placed on the importance of "controls." In his first paragraph he gives a warning on the interpretation of some of his subsequent discussion:

CARLSTON'S WARNING

"As differentiation and specificity in the endocrine glands appear as marked in long life as in short life species, and since the 'accidents of living,' such as infections, dietary deficiencies or excesses and other forms of stress on the individual are on the whole probably not greater in the short life species, the primary 'timer' of the life span is evidently hereditary factors not essentially conditioned on tissue differentiation. Accordingly, the hypothesis that the elements of senescence are inherent in the processes of differentiation does not seem fundamental. On this hypothesis the problem of aging embraces the entire life span of the individual. Even if this hypothesis did express some truth, it is not very useful at the present stage of biology, in part because of the lack of adequate methods for testing it. We shall therefore focus our attention mainly on the late adult and the advanced age periods, since here we have both data and methods of testing their interpretation, albeit much of the data may be irrelevant or inconclusive, some of the methods need refinement, and most of the experimental material requires improved control."

It is important to remember Dr. Carlson's comment — and always to be grateful for his leadership — as we read the hundreds of articles that relate to the glands of internal secretion and aging. Probably 80 to 90 per cent of such articles are in the foreign literature, and probably in 99 to 100 per cent of the articles no "double-blind controls" were used in the evaluation of the results of treatment. A recent paper(8) described a series of 27 patients confined to a home for the aged who received a balanced combination of androgen and estrogen which "effected the desired improvement in symptomatology and, in some cases, stimulated the deposition of calcium in osteoporotic bone. No change in osteoporosis or symptoms was observed in a control group of 27 patients." Another article(9) referred to the use of a capsule

containing methyl phenidyl acetate hydrochloride (Ritalin), 5.0 mg.; methyltestosterone, 1.25 mg.; ethinyl estradiol, 5.0 micrograms; thiamine, 5.0 mg.; riboflavin, 1.0 mg.; pyridoxine hydrochloride, 2.0 mg.; vitamin B^{12} activity, 2.0 micrograms; nicotinamide, 25 mg.; and dicalcium phosphate, 250 mg. In this study these capsules were administered to 112 geriatric patients, aged 73 to 99 years, in a home for the aged. "Their chief complaints were fatigue, weakness, anxiety, nervousness, depression or confusion. The drug was given over a period of two months and the criteria of effectiveness were changes in weight, blood pressure, glossitis (when present), and the sense of well-being."

The authors of these articles and the authors of many others could quite properly point their collective finger at me and say, "Well, what are you doing in this field, and since you aren't doing anything, who are you to raise questions about our work?" I wouldn't blame the authors for asking the question; I would simply make a further point that in these homes for the aged there exists an ample opportunity for double-blind studies, and I believe that all of these preparations should be studied only with these technics. Such studies might very well show that these preparations are effective, but I would also anticipate that the percentages of patients showing improvement would be lower if neither the patient nor the physician knew what was being administered.

CHARVAT'S ABSTRACT

I made reference to the foreign literature, and I would like to quote in its entirety an abstract of an article written by Professor J. Charvat,(10) Professor of Medicine in Prague, Czechoslovakia. The abstract reads as follows:

"Aging is not caused by disturbances in internal secretion, nor can it be reversed hormonally. Oestrogens are found in the urine in both sexes from puberty to the 9th decade, but whereas in men the level is almost constant, women show the well-known sudden change in the years of the menopause. After the menopause the quantity of oestrogens excreted is lower than in men; nevertheless, in women the proportion of androgens to oestrogens is in favour of the latter throughout the entire period. Androgens are also excreted by both sexes, in women about 30 per cent less, but the decrease in both sexes is, as a whole, parallel, and is progressive from the period of full maturity up to an advanced age. Corticoids with an oxygen function at 11- and 17-C are excreted by both sexes, on the whole without change, up to an advanced age. Secretion of these substances contrasts strikingly with the decrease in androgens. It seems that the senile organism loses the ability to break off side-chains from the steroid skeleton at C-17, while hydroxylation at C-11, C-17 and C-21 does not suffer. In old age, the ability of the thyroid gland to produce hormone somewhat decreases. Nevertheless, this does not usually lead to hypothyreosis because the tissues of the aged have a heightened sensitivity to the thyroid hormone. The decreased secretory activity of the thyroid gland is thus a useful adaptation. The increased sensitivity of the tissues to the thyroid hormone in old people perhaps explains why thyrotoxicosis without an obvious goitre or eye signs occurs more often in old age than earlier in maturity. The effects of these senile noncomplicated thyrotoxicoses are often restricted to the myocardium."

This is an important abstract in that it starts with the statement that "Aging is not caused by disturbances in internal secretion," and yet points out that there are changes in all of the glands of internal secretion with age. Those of us interested in this specialty are aware that the pituitary gland functions quite differently after the menopause than it does during puberty and that certainly the ovary is an entirely different organ during different decades. The changes in the ovary and testis form the basis of a prolonged discussion by many authorities in the *Conference on Problems of Aging.*[11]

There is no extract of the anterior pituitary or any pituitarylike preparation, and no extract or preparation from the posterior pituitary that should be considered for the treatment of the processes of aging; certainly the same holds true for the thyroid, pancreas, adrenal cortex, and adrenal medulla. I believe most of the physicians who specialize in gynecologic endocrinology do their best not to give hormones to women in the menopause unless their symptoms are quite severe. The question of the use of the male hormone, female hormone, or combinations of these, for the complication of osteoporosis is still the basis for much discussion (since none of us have any data to indicate what the administration of these hormones may or may not do to the incidence of cancer).

Regardless of what the male hormone may do for other physiologic or pathologic conditions, the following statement is incontrovertible: No evidence has been published to indicate that any preparation of male hormone has any effect whatever in the treatment or impotence in aging males. In this field all double-blind studies have demonstrated that neither the patient nor the physician can tell when the patient is receiving a placebo.

And so, from my standpoint, I am not an "enthusiastic treater." I have had the pleasure of knowing a great many of the "elder statesmen" of the Endocrine Society and I have sat in on a fair number of discussions relating to this problem; at the moment I cannot remember a single one who himself was taking any hormone. (And these same friends if they read this will quite correctly say, "There he goes again, making more of his sweeping statements without a single fact to support them." So be it!)

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UNIVERSITY OF ARIZONA DEPARTMENT HEAD NAMED VISITING LECTURER

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Dr. Wertman is available for two day assignments. Titles of his lectures are "Man's Natural and Acquired Immunity Against Disease," "Intracellular Parasites," "Blood — The Middleman," "Laboratory Diagnosis of Infectious Agents," "Protista — The Third Kingdom?," and "Microbes of Merit."

A University of Arizona faculty member since 1956, Dr. Wertman is author of more than 50 scientific publications on medical microbiology and immunology.

He is a member of the American Society for Microbiology, Phi Sigma Xl, American Association of Immunologists, American Association of University Professors, Society of Electron Microscopy, and a Fellow of the American Academy of Microbiology.

Carotid Body Tumor, Its Recognition, Resection, and Replacement By Arterial Graft

Philip M. Englund, M.D.
George L. Hoffmann, M.D., F.A.C.S.
Judson J. Calhoun, D.D.S.

A case report of the removal of a carotid body tumor, which necessitated an arterial graft for a portion of the common and internal carotid arteries. Complications were minimal.

Nature endows living forms not only with the mechanisms necessary to support their existence but often lavishly duplicates and secretes useless or puzzling appendages. The carotid body seems to fall into the latter category. Closely enveloping the carotid artery at its bifurcation, protected by the overhanging angle of the mandible, it can regulate pulmonary ventilation when urged by changes in the acidity, oxygen or carbon dioxide in the arterial blood. Other methods of regulation of the oxygen supply to the body are available and the carotid body is seldom called to dramatic usefulness and, like mosquitos, one can do quite well without them. The only mischief of which this organ is capable is to undergo tumefaction. Few organized collections of cells can boast of such resistance to pathologic change.

Carotid body tumors are rare(1). Because of a slow rate of growth, the low index of suspicion, and the rarity of malicious consequences of its presence, many tumors do not come to the attention of the physician. Approximately 350 patients have been reported with proved carotid body tumors!

The patient is urged to seek medical advice because of an enlargement in the neck or more rarely because of neurologic symptoms: a drooping lid; thickness of speech; fainting. The preoperative differential diagnosis lies among brachial cyst, metastatic carcinoma, neurofibroma or carotid body tumor. The correct preoperative diagnosis is seldom made. When made, it is by a suspecting physician who finds a firm, non-tender mass on either side of the neck, just below the angle of the mandible, varying in size from 2 cm. to 6 cm., intimately associated with the carotid artery and freely movable laterally but not in the vertical plane. It has no expansile pulsation of its own. It has been present from two to six years with no startling change in size.

The carotid body was first described more than 200 years ago by Albrecht von Haller,(2) who walked with such diverse personalities as Voltaire and Casanova. A tumor of the carotid body was removed by Riegner in 1880, according to F. Marchand who was careful enough to record the feat. As early as 1903 Scudder removed such a tumor in the United States.

It is difficult to resist removal of any foreign growth or unusual appendage. A carotid body tumor is no exception. Everyone seems to be agreed that the neck should be explored. Once it is apparent that the carotid body has undergone usual growth change, the treatment is not quite so clear. "Situated as they are, in intimate relation to the carotid bifurcation, their surgery is attended by the hazard of cerebral ischemia. Left alone, the patient runs the risks of a progressively enlarging tumor, of uncertain innocence, in the neck".(1)

Several thoughtful investigations into the subject have been made. (1,2,3,4,5) Most feel that surgical exploration should be made and if feasible (without interrupting the carotid artery) the tumor should be removed. If removal appears to be complicated and the carotid artery must be divided it should be replaced by a graft, thus somewhat decreasing the possibility

of producing cerebral ischemia and its attendant gloomy series of neurologic catastrophies. Several patients have now survived replacement of the common and internal carotid segments involved.(6) Due to unavoidable local trauma to nerve pathways in the area, hypoglossal, spinal accessory, vagus, or sympathetic, paralysis are frequently present singly or in combination.(2)

The following case report involves the successful removal of a carotid body tumor with sacrifice of the internal carotid artery and the replacement of it by a graft.

CASE REPORT

A 38-year-old truck driver presented himself to one of us (JJC) because of aching pain in both jaws for four days. No cause could be found for the pain in the oral cavity, but the oral surgeon palpated a mass below the left mandible and he was referred to one of us (PME) for a medical evaluation. The aching radiated into the left submandibular region where he had noticed a small, occasionally tender, swelling for the past year. He thought the swelling had increased in size during that period of time. Jarring motion of the body while riding over rough roads, he says, sometimes resulted in a momentary sharp, knife-like pain in the area of the swelling. He had noticed no unusual swelling elsewhere and was generally in good health. His weight had remained constant over the past several years at 190 lbs. His ears "drained" on one occasion while in combat in World War II. There has been no trouble with his ears since. He was confined to his home in 1948, spending more than a month in bed because of a "touch" of pneumonia while living in Arizona. This was accompanied by pleuritic-type pain, fever and cough. No chest x-ray was taken.

The physical examination revealed him to be healthy appearing. Chronic cystic acne was present on his face, neck and upper thorax. The eyes, including the occular fundi, were normal. No evidence of infection was present in the tonsils. On the left side of the neck, lying 1 cm. below the angle formed by the mandible and the sternocleidomastoid muscle, and deep to the later structure was a firm, slightly tender mass measuring 1x2 cm. which appeared to bear an intimate relation to the carotid artery. The tumor transmitted the pulsations of the underlying artery but was not expansile. No bruit was heard over the mass. The neck was free of any other abnormality. The heart, lungs, and abdomen were normal. A complete examination of the nervous system was normal.

The hemoglobin was 15 gms., the WBC count 9,800, and the differential count was normal. The urine specific gravity was 1.022 with no sugar or albumin. Skin tests were done and showed no reaction to tuberculin, but the intradermal test using coccidiodin gave an angry response. X-ray of the chest in the posterior-anterior and lateral projections showed no abnormalities.

The initial clinical impression was carotid body tumor. Surgical exploration of the left side of the neck was carried out by one of us (GLH).

Surgical exposure (GLH) was difficult because of pronounced vascular adherence to the surrounding tissues. It was evident that the tumor could not safely be peeled from the carotid bifurcation. Accordingly, the tumor was excised together with a segment of the involved carotid artery. A Teflon graft 2½ inches long was placed and served to establish flow between the common and internal carotid arteries. The branches of the external carotid were ligated.

Postoperatively, the patient experienced transient difficulty swallowing and thickness of speech because of temporary vagus and hypoglossal nerve palsy.

Sections of the tumor showed moderate vascularity with a mixture of epithelial-like cells and fibrous stroma. The artery was thick walled but not invaded and no mitotic figures were seen.

SUMMARY AND CONCLUSIONS

The removal of a carotid body tumor and a portion of the common and external carotid artery and its replacement with a Teflon graft is reported. Various diagnostic features of such tumors are emphasized.

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Panel: Care of the Patient With Advanced Malignant Disease

Moderator: Darwin W. Neubauer, M.D.

Panelists: Bishop Francis J. Green

Jeanne C. Bateman, M.D.

C. Howard Hatcher, M.D.

Roy Hertz, Ph.D., M.D.

Henry S. Kaplan, M.D.

Harold W. Kohl, M.D.

Charles P. Neumann, M.D.

A discussion by a Catholic Bishop, Internist, Orthopedist, Radiologist, Psychiatrist, Oncologist and Research Clinician of the philosophy of how far medical care should be continued in the hopeless case of cancer.

Dr. Neubauer: This panel devoted to "Care of the Patient With Advanced Malignant Disease" will be started by asking the members to give a short talk, presenting any particular thoughts they might have related to this problem. During that time if you will write out such questions as you might have we will present them for discussion.

Bishop Green: First of all, I should apologize for being here. I am not of the medical profession, as you know. But we do have something in common. We both take care of the same subject. And a doctor's area of course is the body but not entirely divorced of the soul. And the priest or minister's area is the soul but not divorced of the body. Both form a very complex subject upon which to work. And of course, more often than not, doctors and priests meet at the same place, the bedside of a patient. And as a clergyman, I think I can speak for all faiths. We have tremendous respect and tremendous admiration for the work of the doctors and what they do in alleviating pain and restoring people to good health.

One of the problems that has confronted priests and ministers, I suppose, is the problem of people with incurable diseases. Just how far should a doctor go to keep the patient alive? The theology is rather queer on it. It says that we must always take normal means to keep us in health, keep us in life. So the question always comes, "What are the ordinary means, and what are the extraordinary means?" And I think perhaps it was best brought out by one of the doctors in Tucson who called me up many years ago and said, "Doctor, here is a patient that you know very well. He has been living an animal existence for the last six or seven years. He is no good to himself, evidently, and he is no good to his family. Now he has developed pneumonia. What is my responsibility? Should I give him these modern drugs that we have and cure the pneumonia and continue his existence for the next several years, perhaps? Or can I forego giving him these and let nature take its course?" I think that same problem comes up every once in a while as far as cancer is concerned, as far as terminal cancer, anyhow, as we say. How far should a doctor go to maintain his patient in existence? Should he use every sort of method at his disposal? Or does he just level off? Technically speaking it's a question that could be answered by the medical profession, because from the theology of it, it depends upon what is normal procedure and what is extraordinary procedure.

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Now from my point of view, I think that there are three reasons why a patient should be kept alive. One reason is with the hope that some cure or some method might be arrived at by which he can be re-established in fairly good health. The other is for his own spiritual development, for the development of his personality. Sickness many times is the thing that makes us men. As we are alive, we have everything at our control — we cease to live. We don't face problems. Sickness is one of the problems we can't avoid. We have to face it. And there is from the point of view of theology, at least, something conditioning in pain — it is good to suffer at times. It is good to feel cold, because then you will appreciate a warm house. It is good to feel heat, because then you appreciate a cool house. So on. But of course there are limits to the pain that we should suffer. And then finally there is a third area that I think is important, and that is the benefit it gives a doctor to devise methods or devise means by which he might not only help that patient but patients that would come to him in the future. But to carry on the existence of a patient in a vegetative way, to keep him under narcotics all the time so that he is not able to be of any help to himself or to his family, I think there is an area there that could be discussed, and it should be discussed very definitely. Maybe one of the doctors would like to take on from there and we could come back again to some of these questions, doctor.

Dr. Hertz: The problem before us is the care of the patient with advanced malignant disease as stated. At the outset, first thing I would emphasize is that were I to rewrite the title of this panel, it would not refer to *the* patient with advanced malignant disease. We feel that a patient with advanced malignant disease is either Mr. Smith or Mr. Jones or Mr. Brown with advanced malignant disease. He is a distinct individual, a personality and entity who has come to his present state through a very long series of personal experiences and conditioning, both physical, material and spiritual which creates in his case a specific problem that requires detailed specific individual evaluation on the part of all of those who have to deal with his problem. And because of the highly distinctive character of the human personality which the Bishop may care to refer to as the soul, it becomes essential that we do not make any generalizations, that we consider the problem before us in relation to that specifie individual's problem, both physical, emotional, spiritual and otherwise. For this reason, we feel that we must completely and entirely individualize the handling of the problem. We must evaluate the capacity of this individual to adjust to the problem which is before him and help him in that adjustment in the most effective way that we can devise in relation to his specific situation. This requires the coordinated effort not only of a physician but of his spiritual guide, social workers, in many instances of psychiatrists who specialize in certain areas of the problem which this individual represents. And it requires a degree of coordination in effort among these individuals which is altogether too often lacking and not properly brought about. And for lack of this coordination, it becomes necessary for one individual who is closest to the patient in relation to his care to accept the over-all responsibility for his adjustment. Now the major features of this adjustment have to do with the patient's immediate concern for his future. The patient will suffer pain, will undergo innumerable surgical procedures, will accept the toxicity of many of the drugs that we have been talking about. But his major concern is his relationship to his future. And in guiding him in evaluating the potentialities of his future, we have to compromise between the actualities of what we can anticipate and what we think that particular individual can tolerate and accept and adjust to. And this is a matter of skill in human relationships which taxes us very frequently. And not infrequently we make some very serious mistakes in our evaluation.

It has been my observation that by and large we can expect a degree of objectivity and emotional control and capacity to adjust to reality from women to a much greater degree than in general we can expect from men afflicted with the same problems under the same circumstances. And in general I find the female patient, especially one who has borne children, who has had a rather considerable background of physical duress, can accept these realities and adjust to them in a better fashion than can the male members of the population whose stresses are of equal degree and of equal significance.

Now on the other hand, the male members of our society as we have to deal with them (we are talking about adults, largely — we should, I think at some point come to a consideration of the problem of children in this regard) have a concern for the provision of others beyond their own immediate needs. As heads of households and heads of families their concerns are different from what we find among the mothers and the wives with whom we have to deal. In each instance, it is necessary to adjust our council to these specific concerns. And at times we must become involved to a degree with these specific concerns which lead us beyond the limitations of our skills as physicians, which really is the basis for which we are originally consulted. There is a fine line of balance which the physician has to draw between those areas in which he has some special capacity and those areas in which his capacities for council and guidance is extremely limited. So it becomes necessary for us to step out of this area of consultation at certain not specified but adjudged areas at the periphery of the conditions with which the patient is concerned and give over to others whose special training and responsibility qualifies them much more appropriately. We find ourselves doing this daily with the other members of our team whose special qualifications I have already mentioned. This I think serves to provide the patient with more effective council in relation to his or her major concern, and that is the relation of her illness to her future, the relation of his illness to his future. It is this major concern which we must constantly keep in mind in trying to be as truthful as the circumstances permit us to be, and yet having the capacity to state untruths without breach of conscience and to at the same time be able to transmit the truthfulness of the situation to responsible members of the family.

That again puts an additional stress on our judgment as to which members of which families are the proper recipients of such consultation. Legally, it's the next of kin. That is the wife, or if the wife or husband is not surviving the oldest son and so on. This is the legal consideration. All too often we find that the legal requirement puts on us a restriction and a limitation which is totally impractical. In this instance I have to confess that we very frequently and as a matter of necessity simply defy the law and convey communications which are regarded as privileged to individuals who from a legal standpoint may not be entitled to those communications. Then again the physician has to be very careful in his infraction of the law, because he can find himself in a very awkward position in these complicated relationships, having conveyed information to one member of a family who is not the legally qualified recipient of that information, and he can get himself almost into as bad a hole as I have gotten myself into in this present discussion. With that, I think I will terminate and pass right on.

Dr. Kohl: The farther down the line one is in a panel, the less he has to say because the preceding speakers have usually covered all the thunder that we have decided to talk about. It comes to my mind that most of us will remember the time (and I am afraid it still exists in certain instances) when the far advanced or terminal cancer case was rather shunted off into a rest home and forgotten. A distinction in talking about an advanced case or advanced cases of cancer probably should have a subtitle of the terminal cancer, also. I think there is quite a difference between the care of advanced cancer with some hope of having a useful life, or possibly a number of months if the proper medication and the proper methods are used to prolong that useful life, and I want to underline that word, "useful," and the case that is beyond any known help that we have in our hands at the present time. The question that Dr. Hertz has brought up as to, that we are all confronted with about telling the patient that is suffering from advanced and possibly terminal cancer, telling him his problem, is a very difficult one to handle — some patients of course should not be told; others — one is amazed when he finally does tell his patient how much this patient appreciates the fact that he is now aware of his condition. A terminal state of course is a pretty hard thing to define, too. A patient may go on for years, certainly for months and months, after a doctor feels that it is a matter of days. It is rather necessary that the attending physician does not make any estimation whatsoever as to the length of time this patient has to live. In our care of these cases, it seems to me that in the cases that aren't terminal, everything possible must be done to prolong a useful life. We heard a very good

discussion just before this panel by a member of this panel on the use of some of the new chemotherapeutics, and what results have been obtained in prolonging useful life. Then we must consider, when those methods have reached their limitations, of the tranquility of the mind and soul of the patient. I am afraid too often the attending physician, and I certainly fall into that category many times, does not spend enough time with these people. He will call on them in a perfunctory manner, examine him or her, maybe spend fifteen or twenty minutes and be gone. It is surprising how much one finds if they do take time, how much the individual so afflicted wants to talk with his doctor. You can spend an hour, two, three hours sometimes. Sometimes they will tell a doctor what they won't tell their priest or their minister or their rabbi or even their psychiatrist. I think we should spend more time with them if there is some way of finding that time. Then the third thing that we must do of course is to insure comfort of the body, relief of pain, with the least harmful pain killing agent that we find adequate. Then the question of the use of reanimation techniques always comes up when the patient is really terminal or comatose. Should one use reanimation drugs or techniques? In my own opinion, it is unmoral to do that. And usually if one will talk with the family and the patient is unaware of his surroundings, if one will talk with the family, the responsible members of the family, they will usually say, "no, don't do it." Too often huge sums of money are spent for reanimation techniques which prolong life a matter of days, possibly, when that money could be better used to care for the survivors after the head of the family, especially, has passed on.

If I talk any more, Dr. Neumann may not have anything to say. So I'll stop right there.

Dr. Neubauer: I hesitate to call on Dr. Neumann, because the last time a psychiatrist discussed this problem, he told me that the problem was not that of the patient, but it was the compulsive, obsessive personality of the doctors involved. Dr. Neumann.

Dr. Neumann: No, on the contrary, I am interested and was thinking back last night how good a job the attending physicians and the surgeons do with these people, because it is surprising in the ordinary practice in a community how few of these people get to phychiatrists. And I think that is a compliment both to the patients and to the team that is working with them. Now I can see where this would vary in various groups and various situations, but on the whole I am amazed at how few people I see after they have had cancer because of their emotional reactions to cancer. I don't say I never do, but I am surprised at how few. I think this is the result of a lot of things, and one is due in large part to this very organization, and that is the better, more widespread information, the better understanding, and the earlier recognition and treatment of these patients. And the age old question that always comes to us is, "Should you tell the patient, or what should you tell the patient?" Well, I think that there are two controlling factors in this thing, and one is that with the information that has been spread around today and with the general level and education and knowledge that people have today, it is pretty hard today to fool them. And you can't fool a family, a whole family, or very many people for very long, an old Barnum saying of fooling some of the people some of the time, and I think it is very true and very limited.

The second thing is that a psychiatrist, if you stop to think about it, is primarily dealing with people who have rather nebulous problems that they can't get a grasp of and that they need help in gaining a perspective on or adjusting to. But people when they are faced with real problems really do surprisingly well. So that I feel very definitely in most instances that a frank approach to the patient, a frank approach to the family, the very necessary support of the priest, minister or rabbi and the doctor has made a step in the right direction and so has the patient. From there on, the continued frank approach I think is one which pays huge dividends, not only to the patient but also to the family and to the doctor. A little time, as Dr. Kohl said, spent with the family answering their questions, the ones I do see are mostly the patients who don't have their questions answered by their own doctors. And surprisingly, most of these questions can be answered by a doctor and by their family physician or their surgeon better than they can be answered by me or any other psychiatrist. I think that the planning

should continue, not only through the terminal stage but after the terminal stage. And if I have only one criticism, and that is meant in a very gentle manner, we are all too prone that when the patient dies the doctor says, "Well that is the end of that case," and goes on about his own very hurried business and does not see the family until after the particular patient has gone on. And these are the people who then have the tremendous reactions that do end up — its the families rather than the patient that end up in my office and in other psychiatrist's offices. And if I have any plea, it is, "Remember the family — not only the patient and not only during the illness." Thank you very much.

Dr. Neubauer: Dr. Bateman, if I may ask you to include one item which you discussed the other night at the Air Base and haven't mentioned again — I wonder if you would include it in your comments today of your thought of a malignancy being a chronic disease and handling it in that manner.

Dr. Bateman: I'd like to start by saying that I certainly do agree with many of Dr. Neumann's remarks. And I'm not going to tell you how to do things — you know yourself; but I'm just going to tell you how we do it. We see a lot of cancer, and sort of developed a little program. We've learned — I should tell you first of the hundreds of cancer patients I've seen and see — they all know their diagnosis. It is incredible what resourcefulness human beings have. I think it is not what you tell a person, it's the way you tell a person. We find that the sooner a person finds out the nature of his disease, the more cooperative he will be. Of course, I am in the spot where I have to keep that patient coming. And if he is going to keep coming to my office, he really ought to know why he is coming there, or else I am just a farce in some way. When we have the patient referred to us, we usually do several things. First of all — as soon as I can, and that is usually the first time I see a patient — we usually sit down and have a little casual, heart-to-heart talk. I'll find out first how much he knows. And lots of times he'll tell me. And that also helps as far as the family is concerned, because sometimes families are very frightened at their relatives finding out the nature of their disease. Then we discuss this thing on the basis that we are dealing with a chronic disease. I remind them, I ask them if they know anybody with diabetes. And there are very few people who don't know somebody who has diabetes, or somebody with heart disease, although there are many, many other chronic diseases we can compare this to. Those diseases are better known by more people. I tell them that we have done such a good job in medicine, yet we haven't; most diseases we don't cure; and that cancer, and tumors — we usually use the word "tumor" a little more, but they know very well what I am talking about before we get through — are one of the diseases that we like to use the word "control" for, rather than "cure." And we get all that settled, and it is amazing how free the air becomes after that. I have had husbands and wives walk out of our office arm in arm who had had a skeleton between them, and really it is very gratifying to have the air cleared, and from then on to see what you can do in the way of rehabilitation. And then the next thing we do, we get that patient out of the hospital and on his feet as soon as we can and back to his activity. This sometimes bothers the family. It used to bother me. I used to feel real cruel making patients with far advanced disease go back to work. But they do so much better than when they sit and look at those four walls — even if they have to go in a wheel chair. If they aren't going to work, and even if they are going to work, we try to encourage an activity, a hobby which means use of the hands. Knitting is a good one for the women, and we have most of our women knitting sweaters. They can buy these sweater and skirt sets, and we tell them to bring it in, we want to see it. The men I had a little more trouble with as far as this is concerned. But I don't know, maybe the men patients I see are tougher than those that Dr. Hertz sees. They just seem to have as much, well, shall I say the word "guts" as the women do. I've seen just as much courage and bravery and tolerance to their problems in them. I think it is an individual variation. But the hobby business is a little harder. I think men are so busy these days they don't have time to develop hobbies with their hands. But it is a good thing if you can get them to build a little boat or something.

We like our patients to have some — it is fortunate when a patient has some — practicing religion. It really does help the problem, and we try to investigate that a little bit too, and

encourage that. Then we keep our patient out and on his feet just as long as he can stand up, even when we are afraid he might break a bone or something — we know that he'll break it just as soon in bed. And we keep the patient off the heavy narcotics as I have mentioned and have managed on lighter ones. How we did it I don't know, but it is possible. So that when we have a patient who finally really has no physical resources left, we admit him to the hospital. And believe it or not, it is merely a matter of hours — it is rarely longer than one or two weeks — and we let him go to sleep peacefully. That is all I have to say.

Dr. Neubauer: Dr. Hatcher, I wonder with the comments that you might have to make if you would include how you feel about the Brunchwcig or Bricker philosophy of super-radical procedures?

Dr. Hatcher: Well, anyone who is going to take care of a cancer patient should be an incurable optimist. I think all of those who do the all-American or United Nations operation are, per se, optimists. And there is a reason for this. There is something that can be done for anyone, any terminal cancer patient. He has pain — that pain can be relieved. As an orthopedic surgeon, the ones I see most commonly are not the primary tumors of the bone we have been talking about but the metastatic tumors. They have pathologic fractures. They can be made much more comfortable by adequate fixation of that fracture. In fact, a pathologic fracture may be prevented if its imminence is recognized by the modern intramedullary rod which is used so commonly in fractures. Metastasis to the spine causes intolerable pain and often cord compression. Those patients should receive the benefit of laminectomy and decompression and many of them will be prevented from getting cord compression and the paralysis which ensues. Oftentimes the pain is so severe and intractable to medications that the neurosurgeon may be called on to perform a cordotomy, which under good circumstances will give the patient relief of pain and make it possible for him to get along without large doses of narcotics.

I would like to mention one other thing in connection with Dr. Neumann's remarks, "The cancer patient of course dies." The family not uncommonly not only grants the permission for a necropsy but requests it. That family should be asked to come back and talk with the doctor after the necropsy has been performed; they like to know what has gone on in this patient who has died. And the inevitable question that will come up is, "Is there anything hereditary in that disease as you found at the necropsy?" The assurance that there was nothing that would have a hereditary nature is a great comfort to them and above that the assurance that everything that could be done was done for this patient. And I think that they go away much happier and they are much better off for that knowledge.

Dr. Kaplan: Well, I could certainly agree with what has been said by just about everybody on the panel thus far, and I could do it at some length, and this would be absolutely deadly. Therefore, I think I'll take a slightly different track. I'd like to call your attention to the fact that just about everyone who has commented thus far has construed the word "advanced" as hopeless. Now I don't think that advanced necessarily means hopeless. I'd like to take a minute to talk about the obligation of the physician to make very sure that hopeless is really hopeless. I think in the advanced cancer patient it is of the utmost importance that a really authoritative opinion be offered to the patient and to the family as to whether there is in fact any form of definitive therapy which is still available. I think we are often a little bit arrogant in our own thinking and we sort of assume that if we don't know what to do about a particular problem that nobody does. I'll remind you that until Dr. Hertz tried to use Methotrexate® on his advanced pleuro-carcinomas no one knew how to deal with the problem at that stage of the disease. Until Dr. Hertz made this information known to some of the rest of us, we would have been justified in feeling that such cases are utterly hopeless. Now even though I myself may not know how to deal with such a problem, I am aware that somebody somewhere in the world does. I think it is my obligation to find out equally for any other kind of problem whether there is not some surgeon, some radiotherapist somewhere who is trying some kind of clinical experiment that offers some reason for hope. A number of examples come to mind in the field of radiotherapy in recent years which have been made possible by the advent of very high energy equipment. This is not to suggest for a minute that the high energy equipment as such has rep-

resented a pancrea or that it sweeps aside all the problems in the field of clinical cancer therapy. But to pick one particularly horrible example, cancer of the bladder in its relatively advanced stages has been a really most difficult problem. Total radical cystectomy has offered relatively little after what amounts to a quite mutilating procedure. In the last several years, a number of institutions in which supervoltage radiation equipment is available have convinced themselves, and I think could convince you, that they can achieve results in the treatment of relatively far advanced bladder cancer which were utterly impossible to conceive of just a few short years ago. If we are not aware of these in our own local community, we owe it to ourselves and to the patients when presented with such a problem to find out what is being done at some larger institution where clinical experiments of this sort may be in progress. Another example in our own case is the fact that we no longer regard all cases of Hodgkin's disease as necessarily incurable from the start. And we have found by using radical courses of radiotherapy that we can apparently permanently arrest cases that have not gone beyond regional dissemination. These instances are offered only as examples to document the point that the doctor owes it to the patient and to the family and to himself to be utterly sure before he says that no definitive therapy is possible. I think in many communities a consultative tumor board is available at the local hospital. This is a good starting place to find out whether any of one's colleagues have any suggestions or have heard about any treatment anywhere else. I think if that tumor board cannot come up with an answer but suspects there may be something going on somewhere else, they should not be afraid to inquire in a larger metropolitan center where perhaps a more active tumor service is available and a wider experience may make some suggestion come to light which offers the patient something.

Now going back to the cases that really are deemed to be hopeless for whom only palliative therapy or symptomatic therapy is possible, there are perhaps only one or two small points that should be made. The first is, I think it is very important for the doctor to establish a rapport with both the patient and the family which is sufficiently good in one other respect to obviate a serious problem. Many families of advanced cancer patients are victimized by cancer quacks. I think we are all aware of this. And part of the reason that they are victimized is they are led to believe that their own doctor would be impatient with them for coming back to him with questions about one or another dubious kind of management. I think that many of these things can be headed off if the doctor goes to some lengths to pursuade the family that he would be more than happy to talk with them about any little scrap of paper that comes to their attention (and these are fed to them from all sources) which promises a miraculous cure for the patient that he knows to be hopeless. He should offer to chase down for them through various channels, through the Cancer Society and other channels that are available to him. Through this means he will build up in them a confidence not only that everything that he knows about the problem is being offered for the patient, but that any remote chance of hearing of some new and miraculous discovery will be pursued as far as it actually can lead. In this way the patients and their families will not be encouraged to go off to quacks in the terminal stages of the case. And finally, I think Professor David Smithers who is the head of radiotherapy at the Royal Cancer Hospital in London made a very astute comment to me several months ago. He said that he trains his residents to feel that they should be more faithful in making rounds in the hospital in the completely hopeless cancer cases for whom they have absolutely nothing but symptomatic treatment to offer than they should be with the cases for whom they had a far more hopeful outlook, because sometimes the mere fact that the doctor keeps on dropping in on his morning rounds is about the only contact that these people have with humanity in the sense of medical care. We do this on our rounds, and I have noticed that it does help the patients to sustain their morale.

Dr. Neubauer: Do we have some questions from the floor? Dr. Hertz, what is your thought about the far advanced metastatic breast cancer case? Do you advocate adrenalectomy, hypophysectomy?

Dr. Hertz: Adrenalectomy in the patient with advanced metastatic breast cancer and in the patient who has previously responded to oophorectomy indicates a potentiality of about 30 per cent of cases responding with some degree of palliative effect. The degree of contribution to

that palliative effect, the necessary administration of cortisone as replacement therapy is almost impossible to evaluate under operating clinical circumstances. And yet, we all agree that it may play some role. However there have been some control series studies in which cortisone prior to adrenalectomy has been administered and would indicate that prior cortisone by itself had failed to produce the effect which was subsequently observed following the adrenalectomy. There has been a recent survey of the comparisons of the effectiveness of hypophysectomy with adrenalectomy in patients whose tumors may be expected to be hormonally responsive and the percentage of responses comes out just about the same, with a mean duration of response somewhere in the neighborhood of six to nine months. The duration of response after hypophysectomy is just a little longer than after adrenalectomy but not specifically significantly longer. Since adrenalectomy is more generally available in most communities than hypophysectomy, it would mean that the two procedures are equally to be advocated and that adrenalectomy can be carried out more readily and with more emphasis because of the medical circumstances in most communities. I think that should give you an answer to this specific technical problem, but I would suggest, if I may, that we would do better to try to keep the discussion in the area of the more general aspects of the care of the cancer patients, for which I think we are assembled here this afternoon.

Dr. Hertz: I'd like to discuess the voluntary restriction of medical procedures of potential benefit to the patient, pros and cons of such voluntary restrictions. For my part from my own personal experience, I can in no particular case find the point at which I can draw the line, as to whether my undertaking will be of ultimate or immediate or prospective benefit to a given patient. There are areas in which we doubt very much that we are going to accomplish anything other than the perpetuation of the patient's suffering. I find it extremely difficult in any specific case in relation to this child or in relation to this woman or this man who is before me to say that I, as a physician, should have the capacity to make this decision for this individual. Therefore, our operating procedure is to exert any and all effort in any and all cases that we can for the perpetuation of the survival of the patient, leaving to some other force or other power the final decision of the termination of that individual's survival. The practical aspects of this are greater than one would consider. The fallibility of clinical judgment in this area is tremendous, and day by day all of us see accomplishments which we have not anticipated, developments which we had no basis for foreseeing or denying, and it seems to me presumptuous on the part of any human being to accept for another human being the decision as to the final level at which a potential effort for benefit to that other individual should be or should not be undertaken. Bishop Green implied in some of his discussions I believe, unless I misunderstood him, that he felt that in some instances one individual could make this decision for another. Dr. Bateman stated that she does make this decision quite frequently. I would appreciate Bishop Green's comment, and perhaps Dr. Bateman's further comment in this area.

Bishop Green: I think, Doctor, that you have probably answered my problem because you said you felt that there was no case where you felt that there wasn't a possibility of doing something for the patient. The situation I raise is this, where a doctor would say, "I can see no possibility at all of doing anything that will relieve or cure this person. However we could try this, we could try that, we could try something else." Even against his better judgment he does it — all of which is expensive for the family without any great hope on the part of a doctor . . . "Well, we could try something else." And I think I am true in saying this, that in the minds of many doctors they find it very difficult to come to the family and say, "There isn't anything that can be done." They have done everything they know. But then they said, "We might try this, or we could do this, and we could do something else," holding out a false hope that the doctor himself doesn't have and and the family in many instances is willing to buy anything if it will keep, if it will bring back a dear one to active participation in the family. The two points that I raised were, 1) I saw no apparent reason for continuing a person in vegetative life — now Dr. Kohl put a better interpretation on my words when he said, "useful life." In other words if he would be a useful individual either to himself, to his own perfection or to the good of his family. You know when we speak of the good of the family, sometimes sickness is an opportunity for the family to prac-

tice charity that they don't practice at other times in their family existence. A father or mother can be taken for granted until they get sick — then you find a reaction on the part of children that helps them develop their personality. So that's what I had in mind there. But I really was referring to a case where a doctor himself would say, "I don't see any other thing I can do except pull a rabbit out!" Say, "Well this has been done, but we'll try it." There again if there is any possibility of bringing the person back to a very useful existence I say well maybe that is worth it. But I think the doctor himself would answer the question in each individual case if he felt that there was some possibility, if you could go from there to something else. And I did bring out the point that I didn't want to overrule the fact that even though you couldn't do anything for this individual patient by attempting another therapy you might develop a technique that would help another patient later on. I think that is an area that you could explore also. I don't know whether I have answered your question sufficiently or not.

Dr. Bateman: I think Bishop Green is correct. And I think I have probably been misunderstood a little bit. Obviously, I wouldn't make the decision to let a patient die without discussing this with his family. We do not encourage last minute use of quantities of blood since we are short of blood in downtown Washington. We make an all-out effort to keep our patients out of the hospital and on their feet when there is no more resource. Then they go into the hospital. And we discuss this with the family. And I have never had them, maybe with one or two exceptions, fail to agree that we shouldn't use last minute blood transfusions and so forth. That's all.

Dr. Hertz: May I simply say that three of the patients that I described this morning of the 30 who are in total remission were patients who had received respectively 11, 14 and 17 transfusions in the pre-mortem state. That is about all I can say. I might also add that our total supply of blood in the suburban area in which we operate comes from downtown Washington.

Dr. Kohl: I don't want to take any more of your time, but when I was asked to serve on this panel I didn't know anything about it, and so I started to look up in the literature a few quotations — one was by Nietzscher, who I believe was an atheist, if not an agnostic. He said that in some instances it is indecent to go on living, implying self-destruction, I suppose. Then the late Pope Pius the Twelth made this comment in talking — I think it was about four years ago — to an international medical convention in Rome, "In deciding to use reanimation techniques if life is ebbing hopelessly, doctors may cease and desist to permit one virtually dead to go on in peace." Then one of the former Archbishops of Canterbury made this comment, "There are undoubtedly many cases which arise in which some means of shortening life may be justified." Now both of these clerical leaders agree that there is a point in the terminal stage of any illness when further use of extraordinary measures is probably unmoral, as I mentioned before. They both, however, leave the decision as to when up to the attending physician. And that makes it pretty tough.

Dr. Hertz: Actually no matter how far we progress every time we find something new we also find a new problem. And I think the word "teamwork" has been used wisely. But yet we come back to saying, "The physician makes the decisions." And perhaps he is largely responsible for it. But again when you have the physician and the family with an excellent relationship and you have the assistance of the family priest or minister and the moves are followed as you go along one by one, the very often, at least in my experience, the decision is equitably and quietly reached and it is shared by everyone.

The decision finally devolves on the physicians. I think it behooves him to try to define those conditions and circumstances in which he recognizes the line below which he will not continue to exert his best and most competent and continuous effort. What I am trying to say is that I have never in my entire clinical experience been able to visualize the existence of that line. And I feel that those of my colleagues who do are in the same measure that they are able to draw that line to a certain extent prepared to destroy themselves to that same extent. Perhaps in my case I have a stronger feeling of self-preservation and therefore do not visualize that line as I encounter it in daily practice with these patients. I have asked many of my colleagues to try to draw that for me in relation to specific cases or in more general terms, and have not yet been able to extract from them the two points between which any line has to be drawn.

Survival in a Thermonuclear War

5. Family, Nieghborhood and Community Shelters

Solomon Garb, M.D.

The neighborhood shelter is considered the best form of protection. Its advantages are cited and its low unit cost is emphasized. A partial answer to the shelter problem of "my neighbor" is presented.

Mr. Archie Kelley, director of advanced research at AiResearch Corporation of Phoenix, at a recent Region VII Disaster Meeting, stressed the importance of adequate ventilation and fire product exclusion in this type shelter. He said that "antiblast" occlusive valves should be applied to all air vents to allow for exclusion of outside fire gases for six to eight hour periods. He also said that because of its low service and maintenance features a gas turbine engine might be the best form of independent power in such a structure.

With the developing interest in thermonuclear survival greater attention is being paid to neighborhood and community shelters. It is important to distinguish between these two types. Although both are designed for a considerable number of occupants there are important distinctions between them.

The community shelter is built or owned by some governmental agency, either federal, state, county or local. All citizens have a presumed equal right to take shelter in such community structures.

In countries like Sweden, community shelters are built with a great degree of protection against blast and fire as well as fallout. In the United States, however, most community shelters consist of modified basements of large buildings. These give good protection against fallout but give virtually no protection against blast or fire. Although they are far from perfect, their use in emergency can save millions of lives.

The neighborhood shelter is a shelter designed for two to 200 families, built in a residential area and paid for by contributions from the families who will be sheltered therein.

A comprehensive nationwide shelter program must of necessity include a variety of types of shelters to meet different community and family problems. Community sponsored shelters are necessary for those persons who live in trailers or apartment houses and for the protection of persons who are away from their homes at the time of attack. Those families who live in relative isolation must rely on their own resources for protection and here the family shelter is the proper recourse. However, for the residential community, the neighborhood shelter offers advantages that cannot be matched by a community or family shelter program.

The advantages of a neighborhood shelter may be discussed in the following categories: economy, protection and socio-psychologic aspects.

1. Economy.

By pooling construction expenses, it is estimated that the cost per family will be approximately one-half to three-fourths of that required for the individual family shelter of equivalent protective value.

The area allotted per person in the neighborhood shelter can be made larger than that of a family unit and can also obviate the crowding of large numbers of persons that would be necessary in a community shelter. The additional funds available in the neighborhood project might permit the construction of facilities which

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TABLE 1

PLATE PIPE ARCH FOR NEIGHBORHOOD AND COMMUNITY SHELTERS

Maximum Width	Maximum Height	Cross Sectional Area	Cost Per Linear Foot 10 Ga.	8 Ga.	Linear Feet Needed Per Person	(Main Pipe Only) Cost Per Linear Foot 10 Ga.	8 Ga.
10'11"	7'1"	61 sq. ft.	$50	$56	1.2	$60	$67
11'10"	7'7"	71 sq. ft.	$55	$63	1	$55	$63

would add immeasurably to comfort, but would be prohibitively expensive in a family shelter. Such additions might include toilet facilities with septic tanks and the construction of a water supply from wells. With combined effort, the accumulation of proper equipment and supplies would be less expensive.

2. Protection.

In areas where construction costs are a limiting factor in building a shelter of adequate protective value, the neighborhood shelter may provide an opportunity for the contributions of each family to bring higher protective value by pooling such contributions. Funds that would be ordinarily directed to a number of minimal protection basement shelters might better be collected for the construction of an underground bunker which would provide some blast and fire protection and superior radiation protection.

Another contribution to the improved protection in a neighborhood shelter is reduction of radiation to one person as a result of combining efforts of many persons. Over a period of time, it may be necessary to go outside the shelter for brief periods. With several families in a neighborhood shelter, this duty can be shared by several persons without excessive dosage to one or two persons as would be the case in a family unit.

3. Socio-Psychologic Aspects.

One of the most common objections offered to the family shelter program is the question, "What do I do when my neighbors try to get into my shelter?" The neighborhood shelter is the obvious answer to the problem. Such a group is more apt to influence individual hold-outs in the shelter program in a neighborhood and is more able to protect itself from vandalism and enemy activity, should troops be landed here.

The neighborhood shelter lacks the immediacy of the family shelter but provides quickly accessible protection plus the psychologic assurance of its proximity.

The neighborhood shelter would obviate much of the loneliness of the family shelter. The fear of such confinement is a serious concern of those who consider building a family shelter. The neighborhood program would permit exchange of ideas, recreational activities, playmates for children and, most important, the pooling of talents which would make survival during and after an attack more likely. For example, the presence in a neighborhood shelter of persons with training or talents in the fields of health, carpentry or mechanics would make for added comfort and increase survival and reconstruction chances.

If a neighborhood shelter is built it is advised that it be planned to provide shelter from blast and fire as well as from radiation. The added expense of doing this is small. Neighborhood shelters should not ordinarily be constructed in the basements of existing buildings although there may be no other alternative. Whenever possible a neighborhood shelter should be built outside of existing buildings.

There are three basic construction forms for neighborhood shelters. At present the most expensive is a neighborhood shelter made of poured reinforced concrete. As pointed out in an earlier article these costs come from relatively inefficient building practices used in making the forms. If reusable forms were available the costs would drop considerably; however, they are not now available. With present construction methods, a neighborhood shelter made of poured reinforced concrete will cost between $200 and $700 per person.

A second type of neighborhood shelter consists of 84 inch diameter, eight gauge steel pipe with appropriate entrances. When covered by at least five feet of earth a structure of this sort

offers a great deal of protection. The protection factor against radiation is approximately 50,000. Additional tests in actual bomb bursts have shown that these shelters can readily withstand blast pressures well over 100 p.s.i.

In designing neighborhood shelters of this material it is advisable to allocate two linear feet per person. This is about 70 cubic feet per person. The cost of the steel in the main part of the shelter will be about $35 per linear foot or approximately $70 per person sheltered. There are the other costs of providing entrance ways, and closures, ventilation and the cost of excavation. These will vary depending on the number of persons sheltered, the terrain and local labor costs but should total from $100 to $150 for each person sheltered. This is much less than the cost of an ordinary fallout shelter when built by a contractor.

In some cases, pipe arch made of corrugated plates bolted together can be used. The corrugations of the plates are much deeper than those of ordinary riveted corrugated pipe. Therefore, plates are much stronger for a given gauge and can be used over a wider span. They are practical for neighborhood and community shelters. Table 1 gives some information on selected sizes of plate pipe arch. Many other sizes are available.

A third type of neighborhood shelter is practical only in certain locations. If there are large areas of solid rock that can be burrowed into, it will be possible to build a neighborhood shelter at a low cost. In this case, however, at least twenty families would have to be sheltered in order to take advantage of the economy of this method. Well-trained miners can blast shelters into rock formations at a cost of $30 to $100 per person sheltered.

The neighborhood shelter can provide protection against fire and firestorm. If it is in an area where there are few combustible materials no special provisions need be made. However in the usual residential area where houses are fairly close together, it may be necessary to make special provisions for survival in case of firestorm. This can be handled as described in a subsequent chapter.

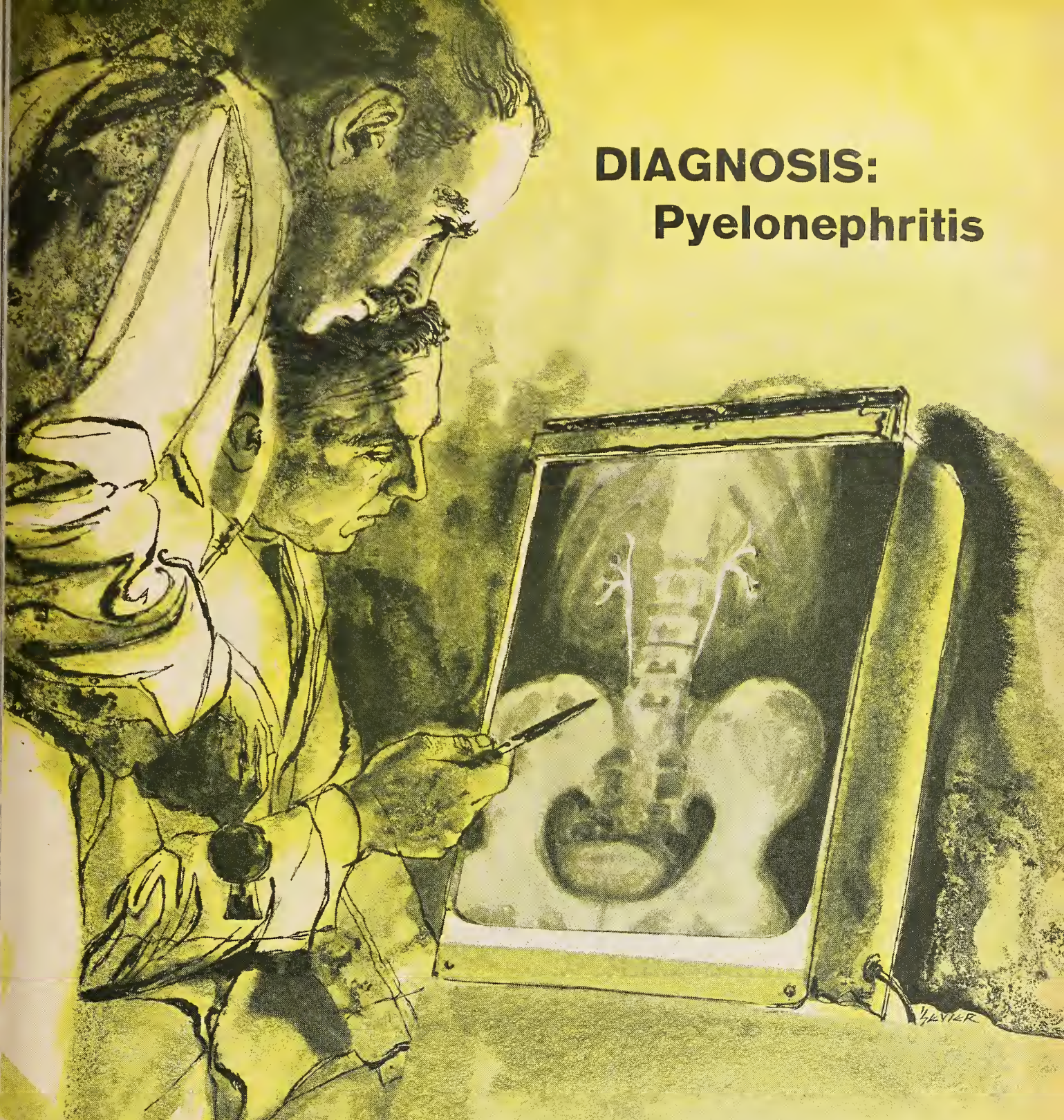
None of this discussion is designed to minimize the importance of the individual family shelter. For some families who live in rural areas the family shelter is the only possible solution. In some neighborhoods where the people are particularly resistant to suggestions that they provide for the survival of themselves and their descendants, the individual family fallout shelter may be the only choice for the prudent family. Nevertheless it appears that the neighborhood shelter will probably be the most important feature of a civil defense program.

EDITOR'S NOTE: These civil defense articles are revisions of the original articles that appeared in the "New York Journal of Medicine" and "Missouri Medicine." Revisions completed by Dr. Solomon Garb in March, 1962 and are now being reproduced in "Missouri Medicine" and "Arizona Medicine" simultaneously.

SHOCK — PATHOGENESIS AND THERAPY

Publication of the proceedings of the June 1961 CIBA-sponsored international symposium on shock in Stockholm has been announced. The volume, *Shock — Pathogenesis and Therapy,* covers every aspect of shock from definition and classification to the treatment of various types of shock. The forty investigators discussed hemodynamic, metabolic and renal factors as well as adjustments of the central nervous system. Traumatic, endotoxic, myocardial, hemorrhagic and allergic shock are all included, along with several chapters on therapy. The informal discussions and cross-comments are well cited and instructive.

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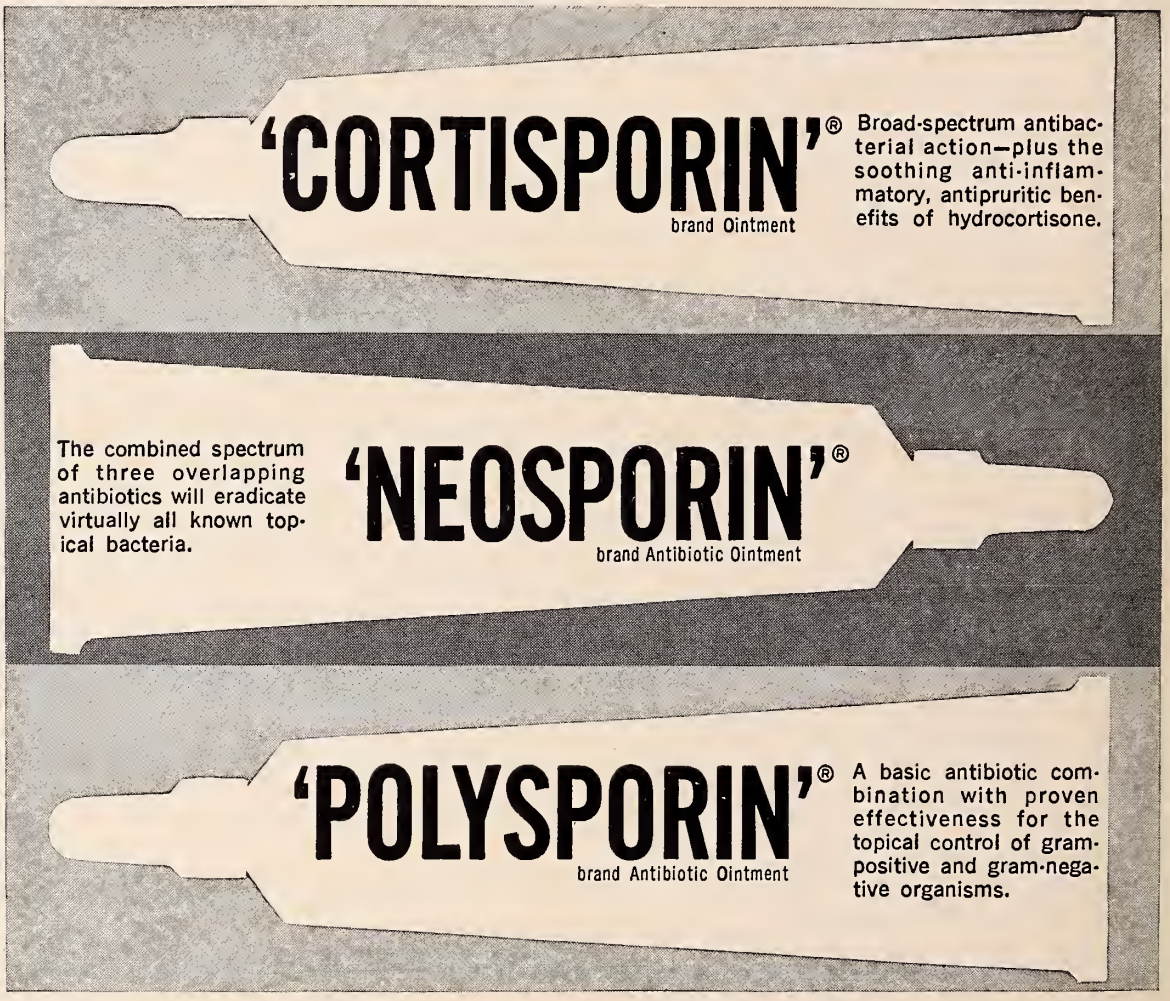
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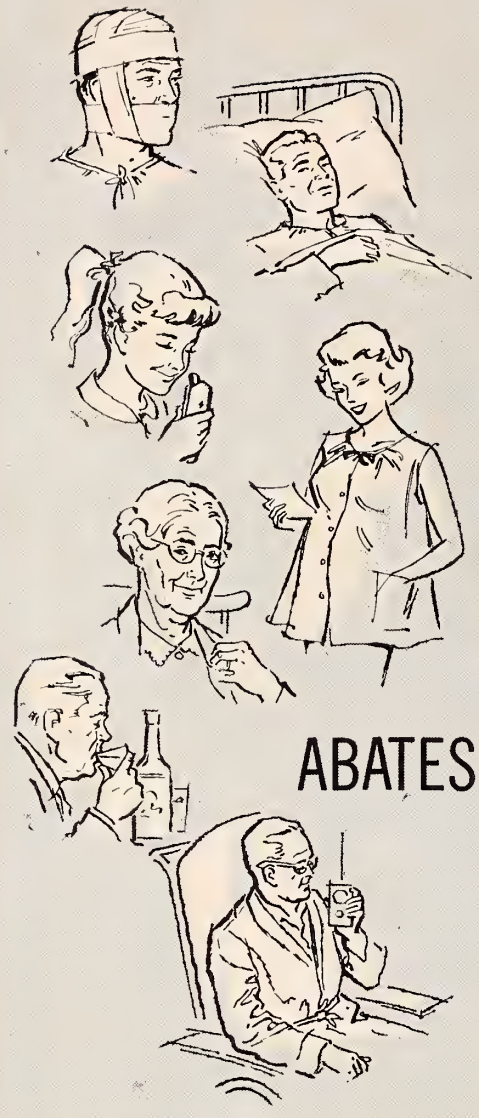
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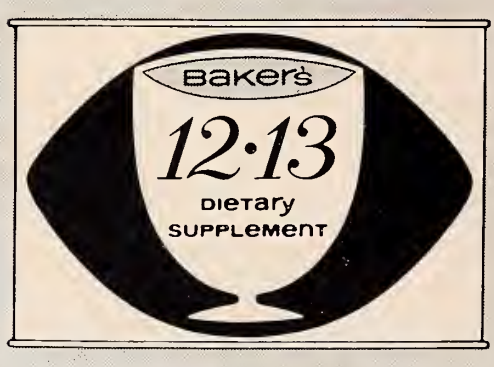
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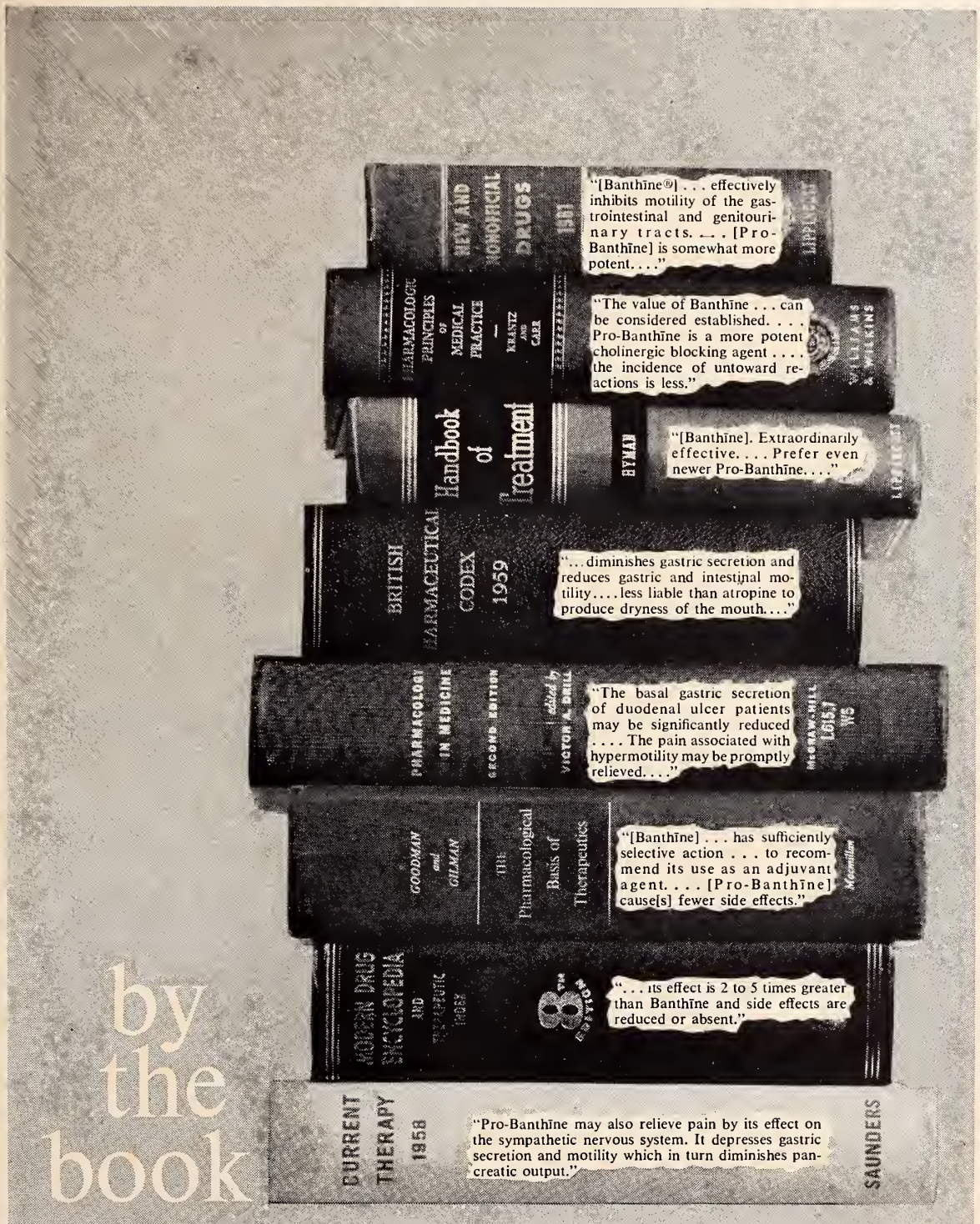
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Medical-Religious Liaison

Doctors can be stinkers. They can be as dogmatic, as doctrinaire as a backwoods preacher. They can know all the scientific and technical data on a given case and be totally insensitive to the emotional and spiritual needs of the patient, who has to live with the disease. Doctors can make false assumptions in the field of human relationships and leave them unchallenged. Were the same thing to happen in the scientific field they would be rapped out of court in a flash. Doctors can be problems.

But they are a wonderful group of human beings. The writer is a clergyman who counts over thirty doctors as part of the parish he serves. These men are all as different from one another as possible. Yet they share some drive and characteristics which are priceless. They care about people, their community, their profession. Some of them even care about their church as it serves the world. I do not find them on the whole insensitive, doctrinaire, or overbearing. We have a deep respect for their dedication, judgment and competence. They are not problems.

Yet problems do exist in the communication and cooperation which should occur between medicine and religion. The establishment of the new Department of Medicine and Religion by the A.M.A. is of great interest at present. This editorial is concerned with some of the factors that contribute to the misunderstandings that exist.

One of the assumptions often made regarding religion in its organized form is that the clergyman or rabbi is the representative of a particular faith. In the area of Christian theology there are many top minds who would gag at this. The church is made up of people. The believing group called out by God constitutes the church, not just the one in charge of sacraments and preaching and teaching. In this frame of reference, the doctor who is a believer constitutes the church at work in the world of healing. This is the view to which this writer subscribes.

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Exclusive Publication — Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

7. Reprints will be supplied to the author at printing cost.

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For practical purposes, however, in the patient's world there are two figures who dominate the scene. The doctor is thought of as representing the field of science in the art of healing, and the minister or clergyman the field of religion. With this as background it is safe to write of those two disciplines in terms of the interrelationship and interdependence of doctor and clergy.

What we have in common: Both the doctor and the minister have the good of the patient at heart. Whatever is done to and with the individual is with the hope that it will see him through the crisis of illness. Although there are exceptions in Protestantism, most clergy undergo a four year college training and at least three years post-college training in seminary. As far as time and disciplined interest go, the clergy compares favorably with most doctors.

Doctor and churchman alike are interested in the strengthening of family life. I have seen some of the doctors here at the church do exceptional jobs in speaking to teen-age groups, couples about to be married, or families in trouble. Medical facts and diagnoses are not their main contribution either. Many areas of common interest bring the two together more than some realize.

There are serious differences in training and point of view between the two professions. Granger E. Westberg, University of Chicago professor has written:

"It is not going to be easy to interest medical people in theories which speak of the wholeness of man. Their training and their thinking has since high school days been almost wholly centered in the physical and biological sciences. The average doctor has had few if any courses in philosophy, sociology, and anthropology, to say nothing of religion. Some have had surprisingly few courses in psychology. Medicine being as complex as it is, the medical student has had few electives so that even if he desired to round out his education he would find it practically impossible to do so in the prescribed number of years. Were this trend to continue there would hardly be any hope in the future of physicians and clergymen being able to engage in discussion on a productive professional level. Their training at present is too different. They speak different languages. They do not ask the same questions. They seem not to have the same concerns or the same goals, yet it must never be lost sight of that they have the same patient."

Although there have been eras in which organized religion has been a foe of competent medicine, it has not been so for the last hundred years. Any residual hostility between the groups is definitely on the wane. A book like Joseph Fletcher's "*Morals and Medicine*," if studied by both groups in a given community could begin to deepen this professional relationship to the benefit of all.

"I have faith in you, doctor" when voiced by a person can spell a satisfactory relationship that can promote healing. This is just as true when addressed to a doctor of divinity as to a medical doctor. The inner man, the whole man is so conditioned by the faith that motivates him that his physical well-being is sure to be involved. Not only is it necessary that the patient have faith in the professional who is responsible for helping him, but the faith he has in the ultimate purpose of life looms large.

Doctors do not always understand how a relationship can be so strong between a pastor and parishioner so that the possibility of terminal illness can be discussed without upsetting a patient. The faith shared by them in an Eternal God can change an attitude toward death. Also, one's attitude toward the Author of life can bring a will to live into play which is necessary so often for recovery.

Everyone is an expert on religion. The professional clergyman is not upset by this. He wants all men to take the subject seriously. After all, if there is a God, all men are responsible to Him. This does not mean that years spent in study of the attitudes and answers men have found helpful in the interpretation of the universe are irrelevant. A patient may haltingly try out on a doctor friend a cherished article of faith which is being used to meet the crisis of illness. The doctor may think that he has adopted a neutral attitude toward the religion of his pateint. This is not altogether possible. Illness can sharpen the sensitivity of people so that they instinctively know whether the doctor rejects, acepts, or ignores what to them are matters that give meaning to life and death. Just to exist even with a healthy body is not

living. The churchman is not the only one who believes that.

Most doctors I know get a bit impatient with the individual who has read an article on medicine in "Readers Digest" or "Time" and now can tell all about a given problem. There is no short cut to profound, medical knowledge. Yet how many times has a doctor "helped" a patient face a deep crisis with a platitude which he may or may not believe. How many times a so-called noncommittal nod by a physician is taken as assent to what is theological nonsense. Man lives by faith — good faith, bad faith, stupid faith or enlightened faith.

No doctor of modern medicine would attempt to ignore the fact that a given patient was a Christian Scientist. A prescription posted on a Christian Scientist bulletin board would be sacrilige. But this sort of problem is coming up all the time in the doctor-patient relationship and the doctor may be ignoring it to the peril of the patient.

Since doctors are human beings, they may run from self-knowledge as much as the rest of us. But that self-knowledge is important in the art of practicing medicine. Knowing the patient may need to include where the patient thinks he stands in the universe, as well as his symptoms. Just a little more time spent on identifying these deep running currents in a patient's life may save a lot of grief later. Some knowledge is required in identifying the religious framework in which a patient lives. Ministers can be of help here.

Every doctor has a theology. The presence or absence of it cannot be hidden. If instead of a respectful nod to "Mother Nature" he really believes in the God who heals as he treats the patient, this will be a powerful factor in the patient's response. To be able to recognize some kinds of faith in people who are ill is of great help in dealing with their illness. Putting some kinds of faith together can be as dangerous as mixing the wrong drugs. Some phases of surgery, for instance, may not need to take into consideration the total outlook or depth convictions of a patient. But total recovery is conditioned by these if the illness is serious enough. The doctor's faith can influence the patient in a profound way.*

*Was it not Dr. Ambrose Pare, 16th century surgeon, who finished the write-up on every case with "I dressed him and God healed him."?

Just as the doctor could take religion, especially his religion, more seriously, the clergyman could be much more knowledgeable when it comes to the healing process. Here his ignorance is appalling. When a physician senses this, he may assume a similar lack of depth in all of the skills and knowledge of the cleric. It may be true of some of the 300,000 ministers in America. But all need not be so tarred. If doctors and hospitals would take time to set up lectures and seminars for these men who have access to the sick room, much could be gained.

When a patient is ill, most of the clergy would not think of questioning that the physician has the final word as to what should or should not happen around or to the patient. This leadership is recognized. But to dismiss the clergy as unimportant as part of the constellation of forces surrounding the patient can be shortsighted. Some doctors give the impression the clergy can only be helpful in making funeral arrangements or comforting the bereaved. This could be naive. The moral and religious dimensions of illness and health are far-reaching.

Recognizing the strict limitations of time the physician works under, it seems presumptuous to suggest another area of concern to him. Is it possible, however, that exploration in this area may lead to a renewed satisfaction in the practice of medicine? Just as the medical profession could help churchmen to sense the magnitude and mystery of healing, so some theological discipline could bring some order out of the chaos in the deepest levels of human thought, interpretation and motivation. Seminars, lectures and papers could benefit doctors too.

Arizona could become a manageable workshop in which a new attitude on the part of the pastor and physician would bring cooperation in the suggested fields of mental health, hospitals, chaplaincies, medical, theological and nursing institutes, and pastoral clinical training efforts. Thus could emerge a team effort which would seek the good of patients on a deeper level. Arizona medieine is good medicine. But who has ever claimed it could not be better? This is an excellent place to begin.

The majority on both sides of this curtain have the same attitude toward faith healing. God expects us to fight disease and illness. He expects us to do all we can to help the stricken. He also stands ready to come and help when

all that can be done is done. He helps during the process of treatment. Who is so wise as to be able to draw the line in any precise fashion? But a pooling of concern for people on the part of responsible professionals can begin to usher in a new day.

When a minister or priest pauses at the bedside of a patient to offer a prayer, as often as not that prayer includes the attending physician. Churchmen pray for you all the time. Could you not help them to pray for and with you more intelligently? Could you not understand better the difference these prayers make?

I, for one, hope this association and effort grows and prospers for the good of all.

Rev. Dr. Paul David Sholin
Mountain View Presbyterian Church
Tucson, Arizona

MENTAL FITNESS

Pity the poet, alone and afraid in a world he never made. This is the catechism of a child. In a later testament he must accept that the world is mostly of his own making. Let him be reminded that he is also landlord of the world of his imagination.

This pseudo-world is haunted by all kinds of threats and prohibitions. They are projections — projections of originally internalized demands imposed by authority figures of long ago: the demands for obedience, punctuality, orderliness, self-control.

The paranoid almost completely externalizes the parental admonitions. Unseen watchers and listeners are still suspecting him, warning and accusing him. They have ways of detecting and broadcasting his most secret lusts. They judge him just as harshly for what he might do as for what he did. The persecution of the paranoid is by no means unreal. This he knows. What he denies is its source in his own superego.

To a lesser but unwholesome extent nearly everyone projects and feels conscience as a vague external force. One is uneasy when he is not sure what is expected of him or what attitudes other people have toward him. Encountered while idling in the marketplace, he has an embarrassed urge to explain. If one goes alone to a movie, it is with a bit of furtiveness. Whenever one is not identifiably functioning in his assigned role, he is on probation. It is as if he must have permission, must be excused. He defends himself when no one is accusing. In projecting superego one loses capacity for honest self-criticism. Such unfair reproach is expected from the environment that one must begin justifying himself.

This self-justification is hidden by subtle rationalization. The individual says: "I like people but I'm too shy to approach them. I enjoy doing things for others but find it difficult to ask favors." He is assuming his own hospitality and friendliness — but doubting that of others. A beloved colleague failed to reply to our telephone call. Now he is worried lest this unintentional slight may have jeopardized our friendship. Should he not credit us with a measure of constancy and understanding which he would surely claim for himself? A patient remains under the care of a physician, yet criticizes him sarcastically to us. When she hints that he has been two-faced or less than completely honest and professional, we wonder if she is betraying her own attitudes and reactions. We do not accept her gift-wrapped calumny. Should we not presume that, in similar circumstances, neither would he?

An obverse and fashionable method of escaping from the dictatorship of superego is to arrogate or usurp the superego functions of others. This is to join the organization and get on the committee. The in-group can busy itself checking the qualifications, grading the papers, preparing to discipline the outsiders and the newcomers.

Think how many synonyms there are for the word, group. The group is a convenient place to hide. Its members and its rude directives have a safe anonymity: "The Board has decided —."

But one chooses anonymity at the cost of individuality. It is resignation. One will graze with the geldings; one will mute one's voice in their muttering resentment of originality and courage and independence.

No. The individual must draw back superego from the environment, reclaim it from the group. He must finally take full and private responsibility for his own moods and mental states. He is landlord of his mind.

His next and necessary task is to identify those hostile tenants, the original authorities, who still

occupy the upstairs rooms. He cannot take a stand against them if he will not face and recognize them and get them in perspective. Otherwise he will go on propitiating the superego figures by all his former masochisms. He will avoid excellence and shun prominence. He will be as they told him to be — obedient, orderly, inhibited — not because he wants to, but because he is ashamed. He will go on feeling questionably welcome, intimidated, conciliatory, submissive. He will curb his spontaneity and warmth and generosity.

For goodness sake, where is his sense of humor! Granted that he cannot and should not completely eliminate the prohibitions which were introjected in childhood. He does not have to suffer their endless reproofs from within. He does not have to project them in their original form and await their echo from the environment. Ordinarily reflection should inform him when superego demands are unrealistie and unfair.

If he cannot get rid of the internal authority figures, he can at least play a game with them.

One way to get off the defensive — with oneself and others — is to be totally defenseless. One agrees with carping superego. One insists on being wholly wrong, entirely worthless by one's own or others' superego standards. One will not stir himself to explain or blame or justify.

The game is rueful. Participation in the sometimes unspeakable sufferings of his patients should toughen the professional man. His only standard should be, can I help? He must withdraw from competition with himself or others. Throwing away the childish scales of value judgments, he should set the example. He, of all people, should use wisely the energy or force of superego.

The energy of superego is available to intelligence and should be used for only one purpose: to direct the instincts here and now. Instinct comes to consciousness as desire. Intelligence determines whether desire should be gratified immediately. If not, superego should either hold desire unchanged in abeyance, or it should assist instinct toward substitute objects or into channels of sublimation. So employed, one's superego pitches in to help the individual and becomes a welcome member of the household.

William B. McGrath, M.D.

EDITOR'S NOTES

(Following notes are taken from "Some Major Problems of Medical Education in the West — The Supply of Students," by Glen Leymaster, M.D., Associate Secretary, Council on Medical Education and Hospitals, American Medical Association, as it appeared in WICHE's *Medical Education in the West*, The Report of a Regional Conference on Medical Education, Salt Lake City, Utah, September 12, 1961.)

". . . by 1975 this country will have some 235 million people in it. . . . This would demand an increase in graduating physicians of about 50 per cent.

———

"These calculations of some 50 per cent increase in the number of graduating physicians is based on the same physician-population ratio that has existed in the past.

". . . the medical school that is to arise in a state which makes its decision tomorrow to build a new medical school is not going to be producing any graduating students until about 1975.

"Maximum expansion of existing medical schools probably cannot be more than 20 per cent of the present enrollment . . . existing medical schools with entering classes of 8,000 might conceivably expand this to as much as 10,000 . . . money going into existing medical schools, something like $100 million each year. . . . It is being spent for research and clinieal facilities which are important, but are ancillary to the primary educational functions of the school itself.

". . . expansion in existing schools is far easier in the last two years than it is in the first two. With a minimum addition of faculty, opportunities for something like 500 to 800 additional students could be made in third and fourth year elasses, students that cannot now be trained because of the lack of space in the first two years.

". . . the history of two-year schools has not been a particularly bright one. The best have progressed in an orderly fashion after a shorter or longer delay into four-year schools. . . . A very few schools, primarily those with very strong science programs in the undergraduate and graduate level other than medicine, are contemplating the institution of two-year schools with no real intent to develop four-year schools.

In this instance the medical school is really an integral part of graduate education, and this is thought of primarily as a graduate program in the biological sciences.

"The third way to increase the number of physicians is to establish new four-year schools. . . . If there are clinical facilities available, and it is a matter of constructing teaching and research facilities alone for a class of 100 students, six or eight million dollars can provide these kind of facilities. On the other hand, we well know there are a number of schools where the cost is estimated to be upward of $50 million.

". . . cost of operating a medical school in five to ten years time will, on the basis of annual budget, be as much as the cost of constructing the facilities.

"The Association of American Medical Colleges, the American Medical Association, and particularly our Council have been wholeheartedly supporting the use of federal money for construction grants for educational facilities.

". . . we have been concerned about faculty shortage . . . each year 700 or 800 unfilled faculty positions are reported by the medical schools, in relationship to a total full-time faculty of about 10,500.

". . . we are more in a normal period now, where the schools as a whole will select about 100 students from 180 applicants.

"Some 70 per cent of the students in medical schools are "B" students, and I, for one, am perfectly willing to entrust the future of medicine to the good solid "B" students.

". . . we are not going to be faced with a serious shortage of applicants to medical schools.

"As a profession we should encourage the competent student to take full advantage of his capabilities. This will automatically provide us with a larger number of potential recruits for medicine.

"Second, we should encourage the relaxation of certain restrictions on admission to medical schools. . . . These are largely geographic. . . . Even at the present time there are many qualified students who are unable to get into medical school because they come from the wrong part of the country. Medical schools should be national institutions as much as they are state institutions."

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July 3, 1962
Darwin W. Neubauer, M. D.
Editor

Dear Dr. Neubauer:

It has come to my attention that a portion of the article on vitamin A poisoning, which appeared in ARIZONA MEDICINE, Volume 19, Pg. 51A, May, 1962, has been inadvertently omitted. The omission occurs in the second paragraph on page 52A. In order to make the information on vitamin A poisoning more meaningful and useful, it would be appreciated if the information that has been deleted is presented in a subsequent issue of ARIZONA MEDICINE. The following addendum to the article on vitamin A poisoning (beginning with second paragraph, pg. 52A) is suggested:

"Another striking case(4) of chronic vitamin A intoxication involves a male infant who was given 8.4 ml of Tri-Vi-Sol daily, beginning on the 4th day of life, through misinterpretation of the pediatrician's instructions. The total vitamin A ingested each day was 70,000 units from the vitamin preparation and at least an additional 71,000 units from the prepared formulas. At two months of age the infant was irritable and had a bulging anterior fontanel, but no other symptoms. Subdural and lumbar taps indicated no abnormality other than an increased intracranial pressure. During his stay in the hospital the patient improved, apparently because he was not given vitamins. Because X-rays of the skull suggested bone destruction or delayed ossification in the parietal bone, surgical exploration was performed at the site of suspected bony defect. However, no abnormality of the bone, dura, brain, or leptomeninges was observed. Upon return to his home, the infant received overdosage of vitamin A again and approximately five weeks later (at approximately four months of age) symptoms again appeared. He was readmitted to the hospital for observation and was found to be irritable and lethargic. There were bilateral temporal subcutaneous swellings. Scalp hair was patchy and there were areas of alopecia. The anterior fontanel was tense and bulging. Pain was elicited when the right arm was moved. The mid-third of each clavicle was enlarged and tender to palpation. Laboratory findings were essentially normal except for the serum vitamin A level which was greatly elevated. When hypervitaminosis A was suspected vitamin administration was immediately discontinued and the patient was discharged on the fourth day of hospitalization. Subcutaneous swelling disappeared and alopecia cleared within three months.

The latter case cited above brings to light a secondary danger associated with chronic vitamin A poisoning, the possibility that failure to recognize the disease may result in hazardous neurosurgical diagnostic procedures which are expensive and uncomfortable. Morrice and associates(5) pointed out that papilledema caused by hypervitaminosis A is indistinguishable from that caused by brain tumor. They further emphasize that even after withdrawal of vitamin A, the papilledema may persist for four to six months and that unless a physician is aware of this fact, his confidence in advising against arteriographic and pneumoencephalographic examination for brain tumor may be shaken."

Sincerely yours,
Albert L. Picchioni, Ph.D.
Director, Arizona Poisoning
Control Program

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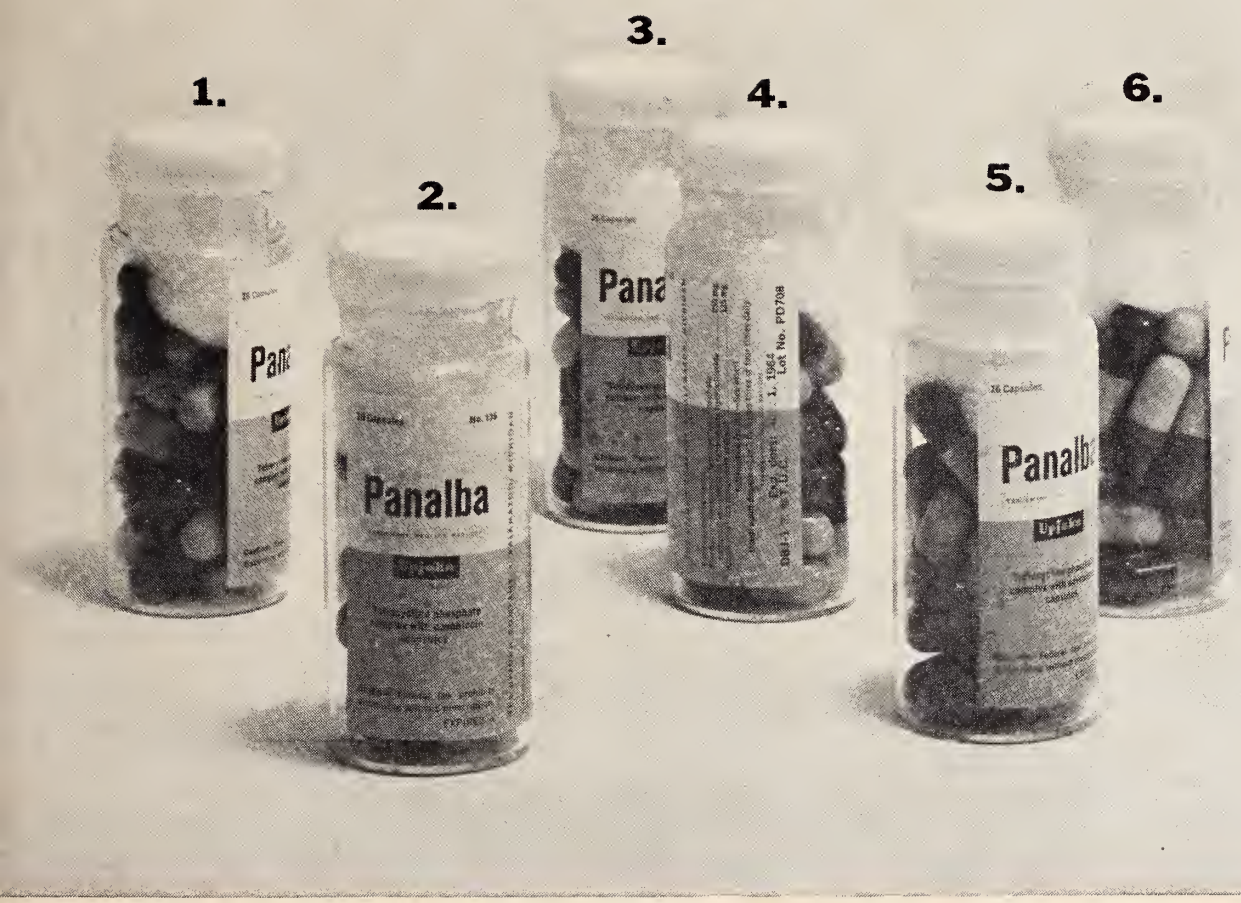
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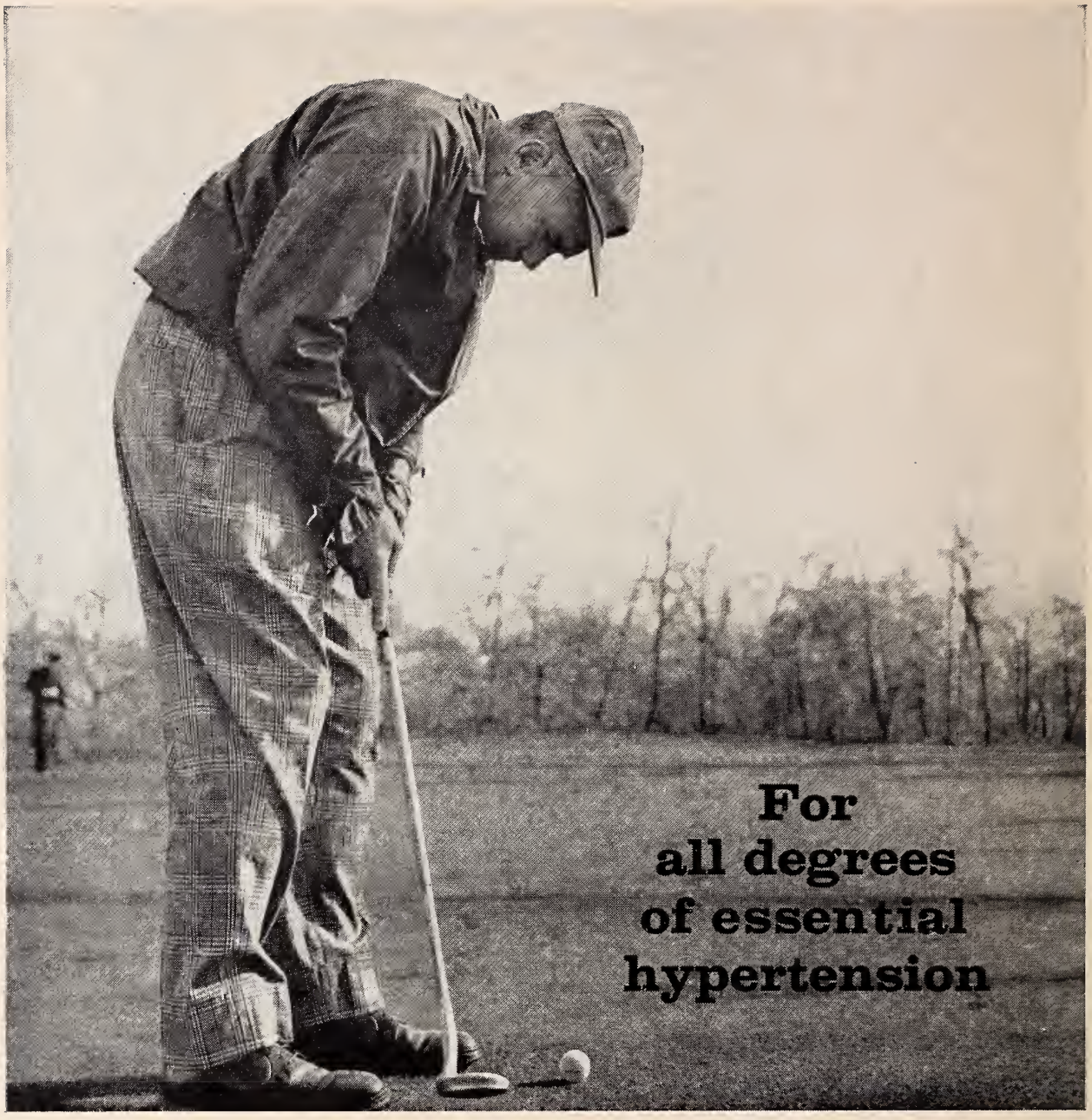
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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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Arizona Poisoning Control Information Center

Rattlesnake Bite and Its Treatment

Although the incidence of rattlesnake bites in Arizona is not precisely known, it ranks high in the nation.

According to Klauber(1) the incidence of rattlesnake bite in the United States is approximately 1,000 per year. Approximately 3% of the bites are fatal.

The venom of the rattlesnake is a complex mixture, chiefly proteins, many of which have enzymatic activity and a non-enzymatic neurotoxic fraction(1,2,3). The constituents of the venom are present in varying amounts, depending on a number of factors. The venom is capable of producing tissue destruction, hemorrhage, hemolysis, neuromuscular blockage (a curare-like effect), and, rarely, bulbar paralysis. It is disseminated in the body mainly by the lymphatic circulation, virtually none by the blood stream.

The gravity of rattlesnake venenation varies, depending on characteristics and behavior of the victim as well as on characteristics and behavior of the snake(1,4,5). For example, body weight of the victim appears to be an important factor. The young, aged, and debilitated are particularly vulnerable to rattlesnake venom. Individuals who react strongly to insect bites and stings and those who are nervous and excitable appear to be especially susceptible. Physical exertion following snakebite may aggravate the effects of envenomation by accelerating the spread of the venom.

The location of the bite may exert an influence. A bite on an extremity is usually better tolerated than one on the head or body. A deep bite may cause more tissue damage than a shallow bite. Multiple bites are more damaging than a single bite. Ophidiasis involving both fangs is usually more serious than that involving only a single fang. Injection of the venom directly into a blood vessel may be rapidly fatal.

With respect to herpetological factors that may influence the gravity of rattlesnake envenomation, many factors may be considered. Large snakes usually inject more venom than do small snakes. Very young snakes and very small species generally have less venom and shorter fangs than large snakes.

Additional factors include the duration of the bite, the extent of anger or fear that motivates the snake to strike, the condition of the fangs and venom gland, the pathogens present in the mouth and on the fangs of the snake, and the species of the snake.

It is important to emphasize that not all rattlesnake bites provoke symptoms. For example, Russell(6) reported cases in which the snake fangs had pierced the skin but had not penetrated into the subcutaneous tissue and the venom had not been injected or, if injected, had not entered the wound. In other cases, even when the fangs penetrated the deeper tissues, evidence of envenomation was not apparent. On the other hand, the medical literature is replete with cases of sublethal rattlesnake bites that resulted in considerable tissue damage of a nature that required plastic surgery or amputation. In some cases of rattlesnake bite, inappropriate treatment or over-treatment undoubtedly produced more damage than the actual bite.

The symptomology of rattlesnake poisoning is well documented in the literature. Russell(7), for example, states that diagnosis is dependent upon the presence of fang marks, immediate and usually progressive local swelling and edema, and some pain. In most cases, swelling about the wound is apparent within 10 minutes following the bite. If no edema is evident within 30 minutes following the attack, envenomation probably did not occur.

Rattlesnake venenation is commonly accompanied by ecchymosis, hemorrhagic vesiculations, swelling of the regional lymph nodes, weakness, fainting, and sweating. Occasionally encountered signs and symptoms include blurring of vision, ptosis, drowsiness, increased salivation, paresthesia about the mouth and throat, nausea, vomiting, and slurring of speech. In fatal cases, death is apparently due to cardiovascular or respiratory collapse.

Opinions regarding the procedure of choice in the treatment of rattlesnake bite are controversial, probably because no single physician

has had the opportunity to treat a sufficient number of cases by each procedure to draw a reliable comparison. Because no dogmatic statements apply to all cases of snake bite and because some forms of treatment are in themselves hazardous, sound medical judgment must be exercised to determine the course of treatment for each case.

A treatment, to be effective, must be initiated promptly, must be appropriate and adequate, and must be maintained for a sufficient time. Since adequate treatment is attended by a serious risk of complications, the first-aider or physician must determine that envenomation actually has taken place before he institutes treatment. Some considerations for the treatment of ophidiasis are indicated below.

In the first aid treatment for rattlesnake envenomation the injured part should be immobilized and, if it is a limb, a constriction band should be applied just above the bite and moved toward the heart as edema advances. The band should be tight enough to obstruct subcutaneous lymphatic flow, but not so tight as to disturb arterial or venous flow.

Cross-shaped or longitudinal incisions ⅛ to ¼ inch long and ⅛ to ¼ inch deep should be made through the fang marks and suction applied over the incisions by means of the Cutter suction cup or by mouth, if suction cups are not available and if the lining of the mouth is intact. Great care should be taken to avoid cutting tendons, nerves, or blood vessel. Suction should be maintained for at least an hour. If possible, the victim should lie completely still and be carried to medical aid following on-the-spot first aid treatment.

If ice is available, the application of ice pack to the injured area may reduce the pain and retard spread of the venom. However, one must be cognizant of the hazard of increasing local necrosis by the addition of cold injury to the tissue-destroying property of the venom. Russell(7) recommends that the affected extremity be kept at 10° - 15° C (50° - 59° F) for 24 to 96 hours. The *prolonged immersion* of an extremity directly in water and ice or ice will produce temperatures below the range indicated above and may enhance damage to tissue(8,9,10). It has been suggested that if immersion in ice-water or ice is employed at all, it should be used strictly as a temporary first aid measure(11).

With respect to medical treatment, experts are well agreed on the effectiveness and usefulness of Antivenin (Crotalidae) Polyvalent*. This antivenin serves to neutralize that part of the venom that the body itself cannot neutralize. Consequently, the smaller the victim, the larger the amount of antivenin needed. Children, as a rule, require larger doses than adults.

Instructions on dosage and methods for injection of the antivenin are included in the package. The brochure also provides directions for skin testing and desensitization. It should be emphasized, however, that the testing and desensitizing procedures do not guarantee absolute freedom from serious serum reactions. Therefore, the antivenin, as with the other procedures, should be used with an appreciation of the risks involved.

It should be administered only if the diagnosis indicates that it is needed and then it should be given promptly and in adequate amounts. Rattlesnake bite usually requires 1 to 5 or more vials(12,13,14) of the antivenin.

Additional important medical measures include the use of broad spectrum antibiotics and tetanus antitoxin or toxoid. Other ancillary measures that may be required consist of blood transfusion (blood should be typed and cross-matched as early as feasible, because hemolysis may render these procedures difficult at a later time), the use of adrenocorticosteroids to combat serum reactions, replacement of fluids and electrolytes, and support of the blood pressure and respiration.

*Wyeth Laboratories, Philadelphia, Pa.

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STATISTICS OF 130 POISONING CASES REPORTED IN ARIZONA IN APRIL 1962

	Per Cent	Number
AGE:		
Under 5 years	72.3	94
6 to 15 years	2.3	3
16 to 30 years	9.2	12
31 to 45 years		
Over 45 years	3.1	4
Not reported	.8	1
NATURE OF INCIDENT:		
Accidental	77.0	100
Intentional	23.0	30
TIME OF DAY:		
Between 6 a.m. and noon	27.7	36
Between noon and 6 p.m.	24.6	32
Between 6 p.m. and midnight	31.5	41
Between midnight and 6 a.m.	5.4	7
Not reported	10.8	14
OUTCOME:		
Recovery	99.2	129
Fatal	.8	1
CAUSATIVE AGENTS:		
Internal Medicines	Per Cent	Number
Aspirin	24.2	32
Other Analgesics	2.3	3
Barbiturates	6.8	9
Antihistamines	3.8	5
Laxatives	1.5	2
Cough Medicine	.8	1
Tranquilizers	3.8	5
Others	11.4	15
Subtotal	54.6	72
External Medicines		
Liniment	1.5	2
Antiseptics	3.0	4
Others	0.0	0
Subtotal	4.5	6
Household Preparations		
Soaps, detergents, etc.	0.0	0
Disinfectants	1.5	2
Bleach	6.0	8
Lye, corrosives, drain cleaners	.8	1
Furniture and floor polish	.8	1
Subtotal	9.1	12
Petroleum Distillates		
Kerosene	5.3	7
Gasoline	3.8	5
Others	0.0	0
Subtotal	9.1	12
Cosmetics	0.0	0
Pesticides		
Insecticides	4.5	6
Rodenticides	.8	1
Others	0.0	0
Subtotal	5.3	7
Paints, varnishes, solvents, etc.	9.1	12
Plants	0.0	0
Miscellaneous	3.0	4
Unspecified	5.3	7
TOTAL	100.0	132*

*The total number of causative agents exceeds the actual number of poisoning cases since in certain individual poisoning incidents more than one agent was involved.

WILLIS R. BREWER, PH.D.
Dean, College of Pharmacy
The University of Arizona, Tucson

ALBERT L. PICCHIONI, PH.D.
Pharmacologist and Director
Arizona Poisoning Control Program
The University of Arizona, Tucson

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Pharmacologist
The University of Arizona, Tucson



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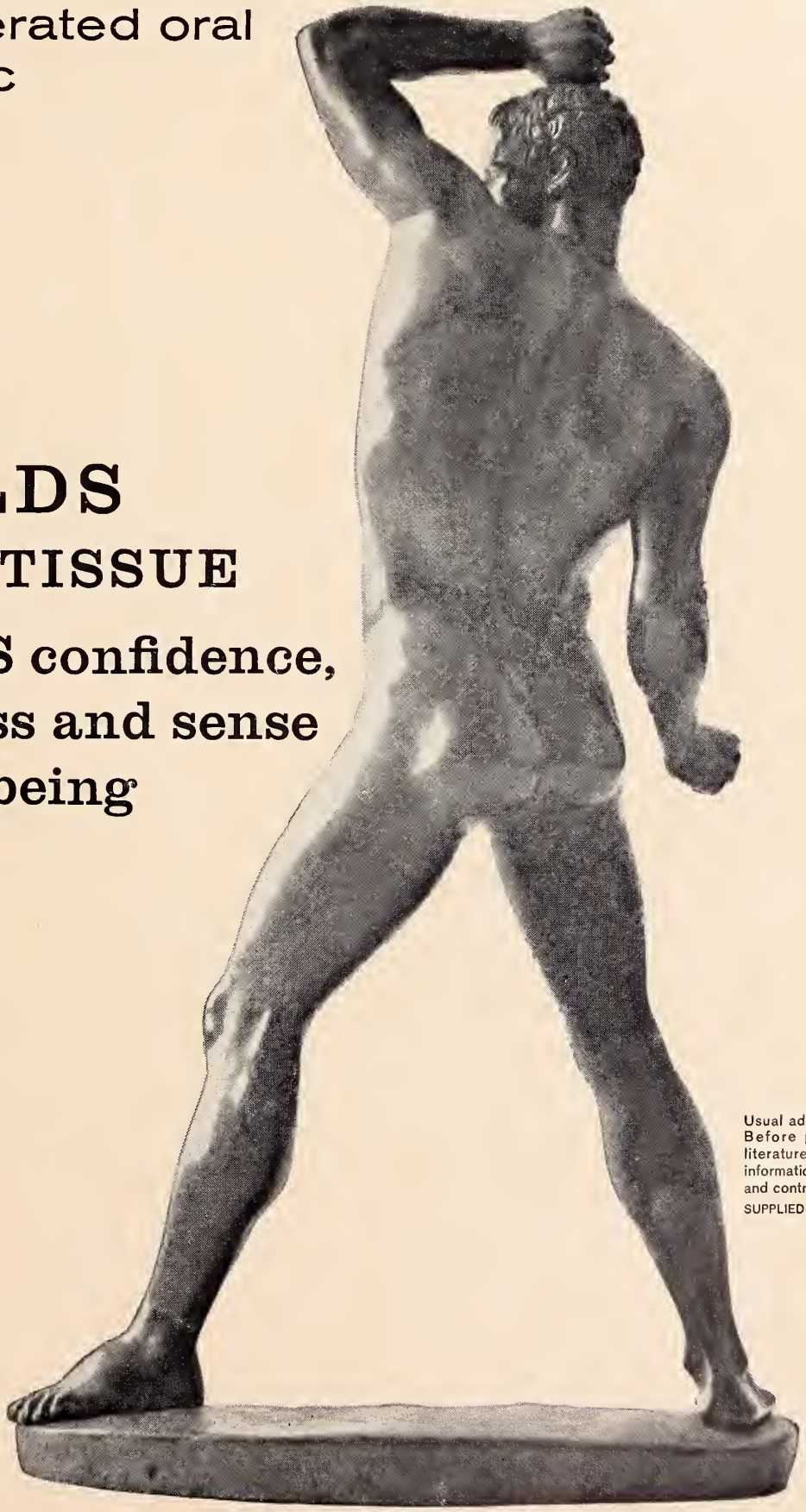
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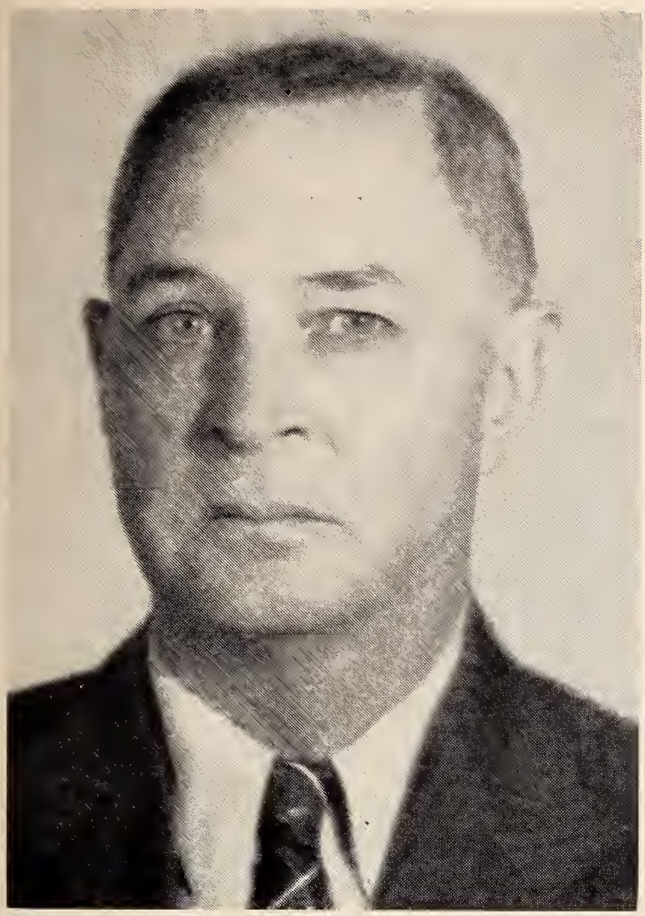
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William C. Cain, M.D.

William C. Cain, M.D.

April 13, 1879 - May 11, 1962

William C. Cain, M.D. of Yuma, Arizona who died May 11, 1962 at the age of eighty-three, was born in Birmingham, Alabama on April 13, 1879.

He graduated from the University of Tennessee School of Medicine in 1911 and practiced medicine in Birmingham, Alabama for two years. Seeking adventure, he moved to Hondo, Texas in 1913 and practiced there until 1919, when he moved to Somerton, Arizona. There he engaged in the general practice of medicine and surgery for three years, and then established his practice in nearby Yuma, Arizona, where he served faithfully until illness forced his retirement two years ago.

In 1924 he married Gladys McCurry, who was an excellent companion. She assisted him in the rugged pioneer type of life and in his practice when there were no paved roads, no sanitation, no cooling, and very little money here. They reared a daughter, now Mrs. Sue Ellen Weire of Santa Monica, California, and a son, William Crawford Cain, M.D. of Saint Mary's Hospital, West Palm Beach, Florida. The son graduated from "Willie" Cain's Alma Mater on the 50th anniversary of Dr. Cain's graduation.

Dr. "Willie" was a member of the Yuma County Medical Society from 1919 and served as president of the society twice. He was also a member of the AMA, Free Masons, and was a Shriner. He was respected and loved by his colleagues and patients.

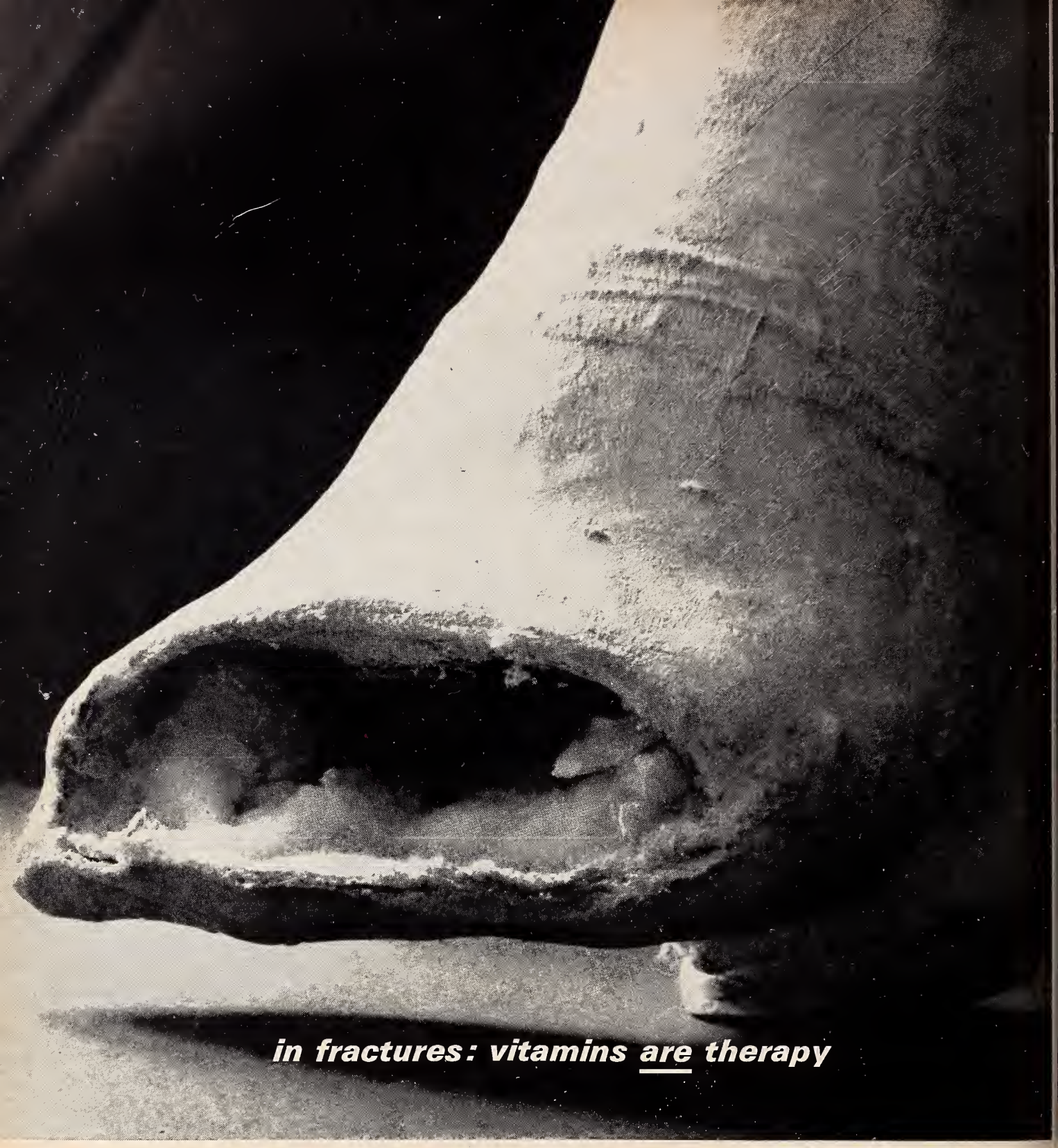
He often reminisced about the pioneer days of his early practice when the regular fee for a confinement case was $10, more often than not paid in eggs, butter or chickens. He accumulated a great number of friends who long remembered his faithful devotion and skilled assistance. He shared with his wife a vigorous enjoyment of golf, fishing, hunting and bridge. Even in his 70's, he played an energetic game of golf, defeating many men who were years younger.

Dr. Cain received medals and awards from President Truman and President Eisenhower for voluntary work in the selective service program of World War II. In 1960 he was given The University of Arizona Award of Merit for completion of 50 years of medical practice. In 1961 he received the Gold Award from The University of Tennessee.

A devoted husband and father; a skilled, honest and faithful practitioner of medicine and surgery; a man who refused none his services; a man who enjoyed his useful life and practice; a staunch and beloved friend and colleague — that was "Willie" Cain.

"O Heavenly Father, I pray that I may emulate all that was good, true and righteous in his life. May his soul be bound up in the bond of eternal life, and his memory remain a comfort and a blessing. Amen." (An old Hebrew prayer.)

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The Seattle Gynecological Society and District VIII of The American College of Obstetrics and Gynecologists will hold a joint meeting September 9-12, 1962. Sixty lectures and discussions will deal with problems of obstetrics and gynecology. Meeting headquarters will be the Washington Athletic Club, Seattle.

Immediately following will be the west coast's first Conference on Obstetric, Gynecologic and Neonatal Nursing sponsored by District VIII of The American College of Obstetrics and Gynecologists. The nurses' meeting will be held at the Health Science Building, University of Washington, Seattle, September 13-14, 1962.

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TWELFTH INTERNATIONAL CONGRESS OF DERMATOLOGY

The twelfth International Congress of Dermatology will meet September 9-15, 1962 in Washington, D.C.

A scientific program involving 350 participants from 41 countries has been announced by Dr. Donald M. Pillsbury, congress president, who is professor and chairman of the department of dermatology, The University of Pennsylvania Medical School.

Postgraduate medical education techniques will be employed centering around 15 symposia designed to apply advances in the basic sciences to clinical dermatology. Informal sessions will be stressed. One hundred exhibits and a full schedule of live, filmed and televised case presentations will be included.

More than 2000 attending physicians will be able to listen to the program through simultaneous translations in English, French, German, or Spanish, said Dr. Clarence S. Livingood, chairman of dermatology, Henry Ford Hospital, Detroit, who is secretary general of the session.

These International Congresses have been held in various parts of the world since 1889. The Twelfth International Congress will be the first one held in the United States since the Sixth Congress in New York in 1907.

INTERNATIONAL COLLEGE OF SURGEONS WILL HOLD NEW YORK MEETING

The International College of Surgeons will hold its 13th Biennial Congress at the Waldorf-Astoria Hotel, New York, N. Y., September 9-13, 1962. A. Mario Dogliotti, M.D., Torino, Italy, President of the College, will preside. Over 3,500 surgeons from all over the world are expected to attend.

The program will include graduate instructional courses, surgical films, scientific and commercial exhibits, and over 200 papers and panel discussions presented by essayists from 27 different countries.

Among the speakers are Victor Goldman, M.D., London, England; Esteban D. Rocca, M.D., Lima, Peru; Samuel Rosner, M.D., Bronx, New York; Abraham Hurtig, M.D., Ottawa, Canada; Erkki V. S. Koskinen, M.D., Helsinki, Finland; Albert D. Ruedemann, M.D., Detroit, Michigan; Joseph Safian, M.D., New York, New York, and Professor Raymond Darget, Bordeaux, France.

For further information write: Thirteenth Biennial Congress Program, International College of Surgeons, 1516 North Lake Shore Drive, Chicago 10, Illinois.

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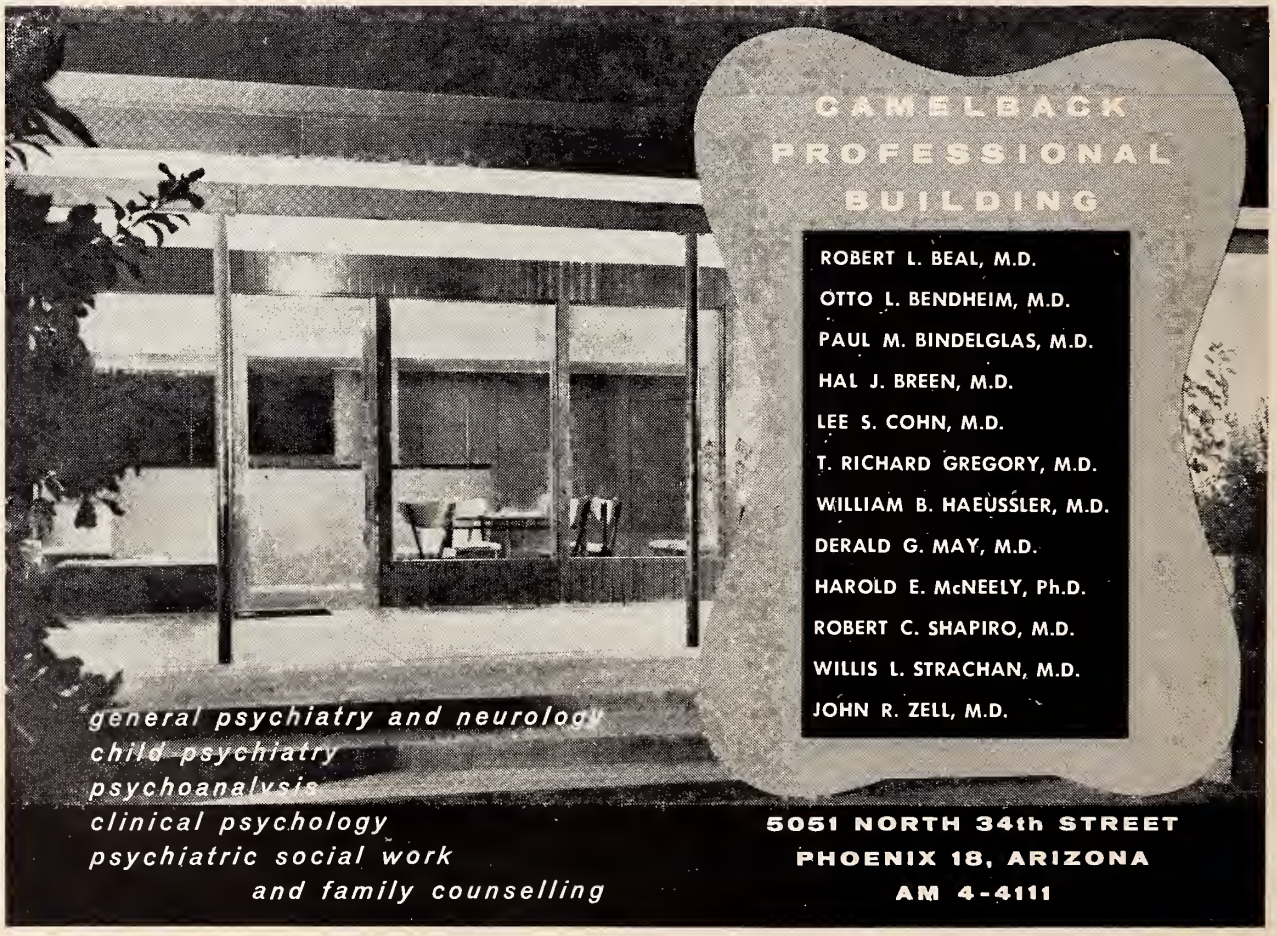
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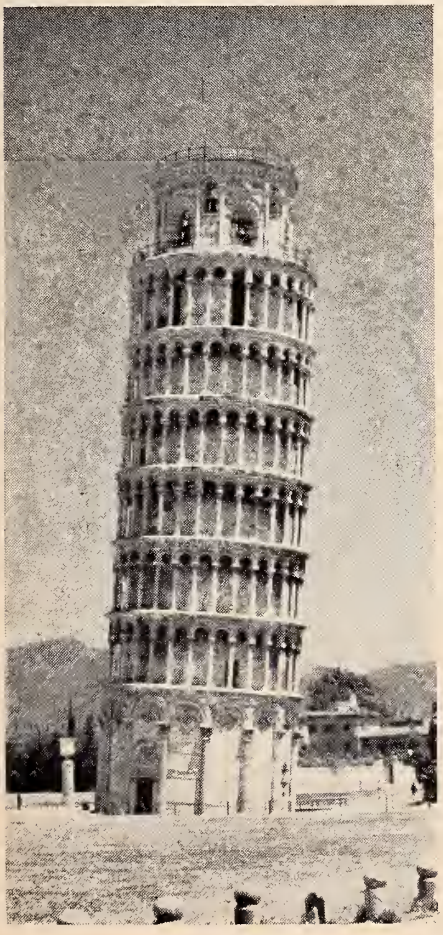
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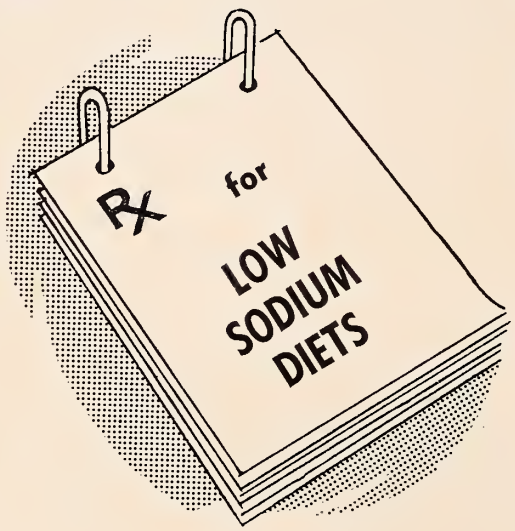
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1. Hodges, F. T.: *GP* 14:86, Nov., 1956.
2. Guild, B. T.: *Arch. Dermat.* 51:391, June, 1945.

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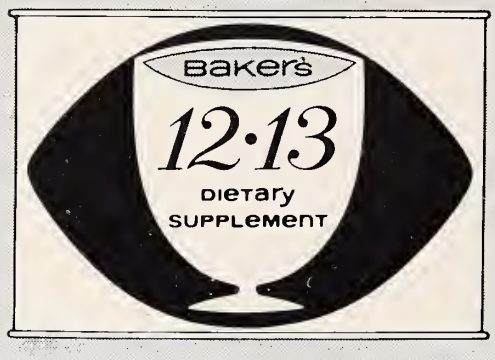
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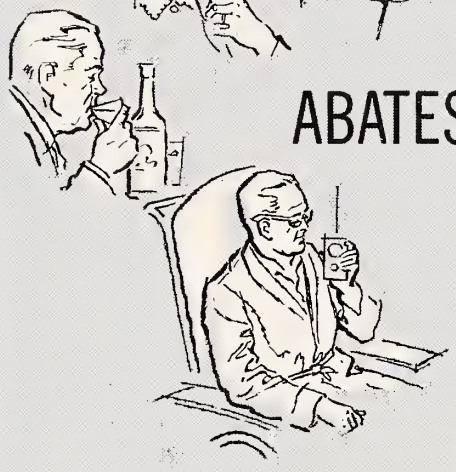
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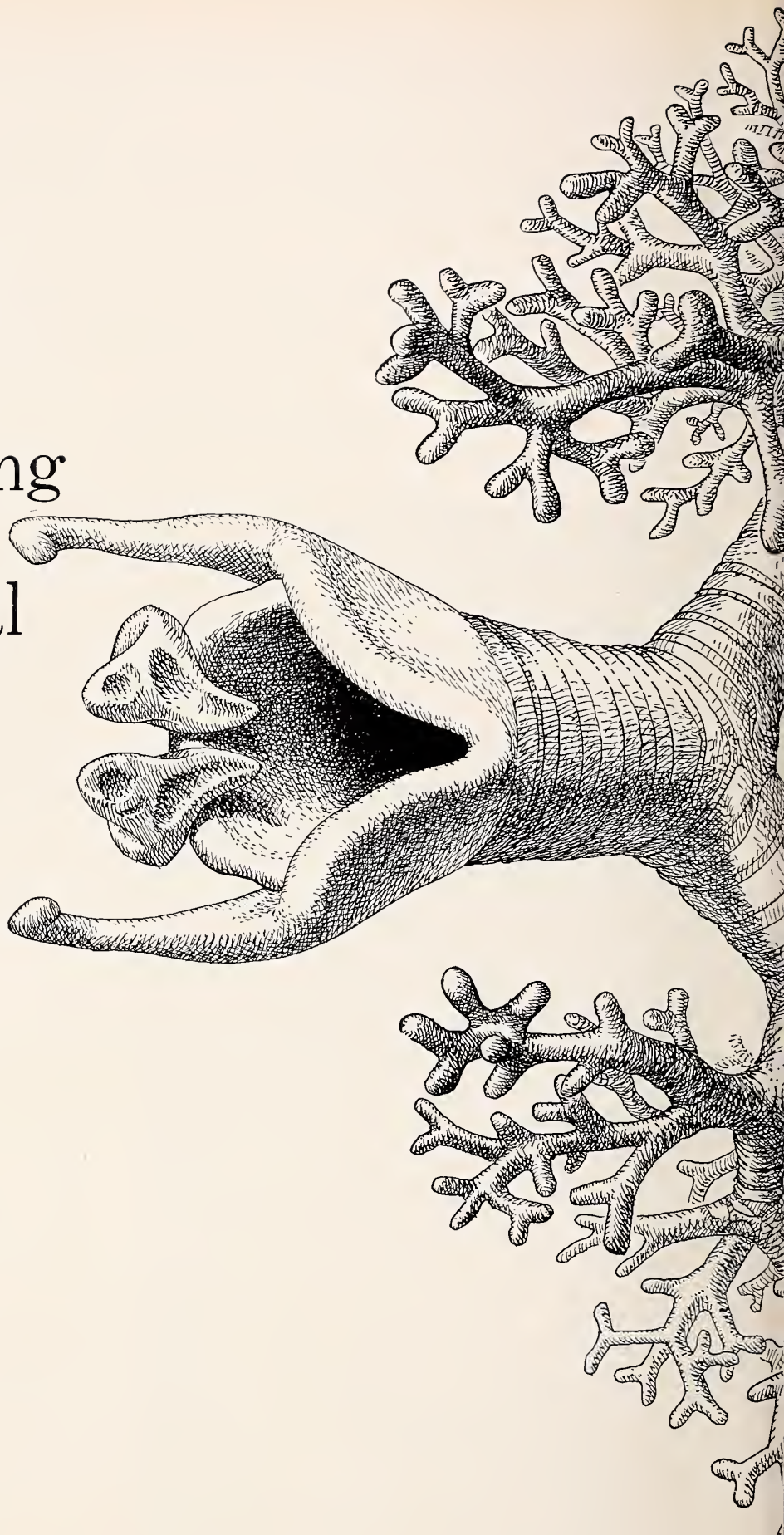
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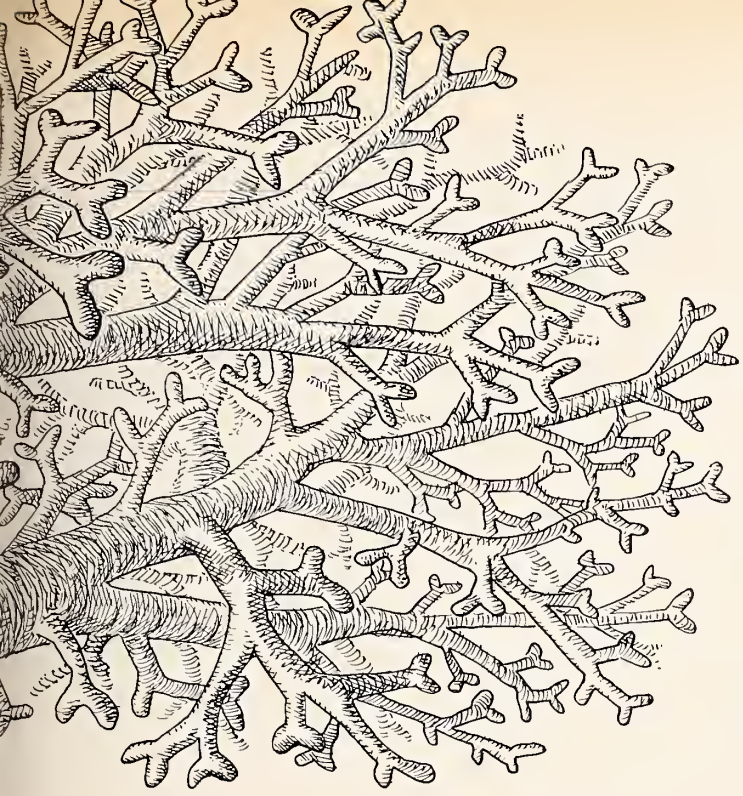
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1961-62 ANNUAL REPORT OF THE PROFESSIONAL LIAISON COMMITTEE

Organizational structure has been the same as in previous years, with individual members of the parent committee serving as chairmen of subcommittee groups, and in turn selecting their members for these subcommittees. Only one change was instituted this year — that was the change in title from the "Subcommittee on Association of Physicians and Surgeons" to "Subcommittee on Related Non-Official Organizations."

The full committee held two meetings during the year, in June and November. However, the bulk of the work of the committee was handled at the subcommittee level, and will be reported separately. Activity was greatest in the Allied Professions, Careers, and Public and School Health subcommittee sections.

The reports of the various committees are as follows:

Allied Professions — Clyde Kurtz, M.D., Chairman

OPTOMETRY: Dr. Paul Case was contacted referable to ARMA House of Delegates resolution No. 16 regarding "Establishment of a Commission on the Relationship of Medicine to Optometry" in the late summer of 1961. Chairman of the subcommittee was informed by Dr. Case that in view of action taken by the A.M.A. in their June, 1961 meeting, this resolution could be dropped and the matter considered closed. No further additional business was brought before the subcommittee in regard to optometry.

PODIATRY: The subcommittee studied the problem of podiatrists in regard to hospital staff memberships and their activities therein. The committee recommended to the Board of Directors that it adopt as our code the statement of policy of the American Academy of Orthopedic Surgeons on the practice of podiatry in hospitals, deleting paragraph No. 6 referable to the performance of surgery by podiatrists acting as technicians under supervision of staff surgeons. It was felt that the surgical practice of a podiatrist in a hospital, even though ostensibly under direct supervision of a member of that hospital, is to be denied.

PHARMACIES: Closer liaison was established between the subcommittee and Mr. Duncan, Executive Secretary, Arizona Pharmaceutical Association. A plea was rendered through the Arizona Medical Association journal for better discipline among the doctors in regard to calling in Class A narcotics prescriptions. The subcommittee is in support of the American Pharmaceutical Association and the Arizona Pharmaceutical Association in their belief that mail-order prescriptions represent a threat to the physician-patient-pharmacist relationship. A positive plan of approach to alleviate this situation where it exists, principally in the senior-citizens group, is being formulated. No formal complaints have been rendered to the committee from the Arizona Pharmaceutical Association regarding ownership of pharmacies or participation in ownership.

OSTEOPATHY: A recent AMA statement of policy whereby voluntary professional association between a doctor of medicine and a doctor of osteopathy would not be unethical if the D. O. met prescribed standards has been passed to the state level for implementation of said policy. The subcommittee supports in a general sense the A.M.A. effort for closer liaison but feels that the evolutionary process will, by necessity, come slowly. Because of the American Osteopathic Association's own desire, both on a national and state level, to remain a separate medical entity and because of the lack of standardization of existing osteopathic schools of medicine, as well as state licensing boards, the subcommittee feels that no liaison should be pursued by this organization at this time. The subcommittee stands ready for liaison should it be requested by the osteopathic group and will continue to accumulate information from other states regarding transitional problems.

Careers and Arizona AMEF — Albert G. Wagner, M.D., Chairman

A successful medical recruitment program in Arizona appears to be under way. After approval by the Board of Directors of the Association with an appropriation of $1000, a long-term Medical Careers Program is being developed. It is designed to find qualified students and stimulate and maintain an active interest in their entire medical career from high school through pre-medical and medical school, internship (specialty training if desired), and into active practice in the community. The state Medical Careers Subcommittee consists of seven members representing the geographical regions of

the state. Each of the 14 counties (with one exception) has a Medical Careers chairman appointed by his respective society.

A pilot program is being carried out in Maricopa County. As it develops, further practical suggestions for use in the other 13 societies are being drawn up for the "Suggested County Medical Careers Program." A packet on Medical Careers, including useful materials for setting up such programs, has been mailed to each county chairman. Further mailings will be sent out. The pilot program in Maricopa County has been well received by students, parents, teachers, and counsellors. Doctors on the committee have worked diligently and effectively. At the county-wide kick off meeting, 750 people including 190 students completed the "Your Career" questionnaire. Since then, the Medical Career Night has been repeated at 10 high schools with 51 doctors participating. An additional 391 people have attended and 204 more students have registered interest in medicine, and are being followed up. A total of 387 students have been assigned to doctor-sponsors.

Recommendations:

1) Continue development of the program as planned.

2) Stimulate participation by county societies, and an active recruitment program using parts or all of the planned materials now available.

3) Provide funds in the current budget for the purchase of films, displays, materials, printing and mailing as needed, with a minimum of $1000 per annum.

4) Increase funds in the Benevolent and Loan Fund in order to increase the number of loans available to students.

ARIZONA AMEF: Contributions to AMEF for the year 1961 by doctors and the medical auxiliary total $17,066.08.

Recommendations:

1) That the $10 assessment be continued.

2) That consideration be given to diverting $5 of this assessment to the Benevolent and Loan Fund for use in medical career loans to qualified students.

Governmental Medical Staffs —
William G. Payne, M.D., Chairman

The work of the subcommittee on Governmental Medical Staffs during this year has been concerned primarily with investigation of the provision for medical supervision of minor children under the custody of various local, county, and state boards and agencies. The laws of our neighboring states concerning these matters have been obtained and studied. Note is made of a Youth Authority established in this state; however, interviews with members of our bench reveal that functioning of this authority has been ineffective. Recommendation for further study and for establishment of better liaison between organized medicine and agencies having custody of minor children is made.

Nurses —
Delbert L. Secrist, M.D., Chairman

With thought and hope of providing better understanding and closer professional relationship between the physicians and nurses of the state, meetings were held with some of the officers of the Arizona State Nurses Association and the Arizona League of Nurses. Letters expressing the willingness of The Arizona Medical Association to assist or cooperate with both of these organizations were sent to their respective executive officers. As a result of these contacts, the following suggestions, or recommendations, are made:

1) That physicians try to consider the nurse as a "partner" in the team that is trying to provide the best medical care for the patient, and not merely as a servant.

2) That in political and legislative matters, the medical association assist the Nursing Association in promoting legislation that will benefit the patient and promote the best medical care for Arizona, and vice versa. *Specifically,* the nursing organizations request the assistance of the medical association in defeating the bill now proposed which would license by waiver nurses' aides, and thus make them licensed practical nurses without going through adequate training programs.

3) That physicians assist as much as possible in the service training of the nurses, helping to bring them up and keep up in the present methods of diagnosis and treatment of patients.

4) That in the matter of local, regional and state meetings. the above respective organizations invite one another, and that each make special efforts to attend and participate in the discussions of each other's meetings. The suggestion was made that perhaps joint meetings might occasionally be held, to the benefit of all.

Related Non-Official National Organizations — Harold J. Rowe, M.D., Chairman

During the past year, this subcommittee has

met at called intervals in cooperation with the full Professional Liaison Committee, and has conducted business concerning the related non-official national organizations. The main subject was the scholarships offered by the national foundations. These were brought to the attention of parties who desired the information — but it is not known to this committee whether the scholarships have been used in nursing and medicine, or not. It has been thought by the committee that in the future, further exploration in the field of arthritis, congenital defects, poliomyelitis, special treatment centers, rehabilitation clinics, heart stations, etc., could be done, and that perhaps the committee could be more effective if more of the national organizations were approached. It is hoped that this can be done in the future.

Public and School Health — Hugh H. Smith, M.D., Chairman

Arising from the deliberations of this subcommittee, the following observations and recommendations are submitted:

The unprecedented population increase and the resultant urbanization and industrialization of many areas of our state is producing many new problems which concern the public health efforts of our state. Problems in waste disposal, air and water pollution, and greater danger of transmission of communicable disease, contamination of milk and food supplies from use of toxic insecticides, etc., point up the magnitude of this public health need. Public health agencies must be well-equipped to meet these new challenges. This signifies the necessity of highly trained staffs competent in the complex skills required to meet modern threats to healthful community living.

The subcommittee reapproved the 1960 report on school health, which in turn was accepted by the Professional Liaison Committee. Attention is again called to the disparity between school health programs provided to children in different school districts in the state.

Recommendations:

1) That the Arizona Medical Association recognize the necessity for strong, well-supported State Health Department staffed by highly trained, experienced, professional individuals.

2) That an efficient local health department be established in every county having sufficient population (25,000 approximately), to protect the health of the people and to bring health services to the citizens most in need of them. In other counties, arrangements for necessary services could be developed on a contract basis with the State Health Department.

3) That the State Public Health Laboratories be provided increased facilities and staff, so that physicians can get prompt and reliable tests done on all suspected cases of contagious disease, including viral and rickettsial infections.

4) That the State Board of Health be requested to revise the list of reportable diseases, and to review the system for collecting this information.

5) That the attention of the State Board of Health be called to the giving of immunizations in some counties by nurses without adequate medical supervision.

6) That a licensing system for medical laboratories, governmental and private, be considered by the association with the view to maintaining a high standard of service to the public.

7) That the association urge action on the part of the State Health Department and of the legislature to improve the quality of nursing home care in Arizona.

8) That the association recognizes the increasing threat of air pollution to urban inhabitants of Arizona, and go on record as favoring a continuing investigation of the problem.

9) That the association stimulate action to improve the health care of school children. This action might, in the first place, be to urge school authorities in those districts not now doing so, to recognize some responsibility for the protection and promotion of health of the children attending their schools.

10) That the association urge its members to assume a more active role in the practice of preventive measures, especially immunizations, among their patients particularly in the preschool and school-age groups.

Woman's Auxiliary — Ernest A. Born, M.D., Chairman

Dr. Born reports no notable activity in this section. No formal report submitted.

The chairman of this committee takes the opportunity to express his gratitude and appreciation to the various subcommittee chairmen who have worked diligently to complete the assignments directed to them.

In two subcommittees, there has been ex-

pressed the need for renewed and intensified activity — namely, in the Related Non-Official National Organizations, and in the Nursing sections. It is hoped that effort in these fields may be continued to the benefit of our profession.

One problem which we encountered this year, which I hope is peculiar to our committee, was a slow start due to loss of continuity, and transfer of records of deliberations and activities from previous committee chairmen. It is hoped that this weakness can be overcome in the future. Proper communication from one committee to another and continuity of effort are essential to smooth functioning of any committee endeavor.

Respectfully submitted,
Ben P. Frissell, M.D., Chairman
Professional Liaison Committee

BENEVOLENT AND LOAN FUND COMMITTEE

June 27, 1962 Meeting

Present: Earl R. Baldwin, M.D., chairman; Donald K. Buffmire, M.D.; Charles E. Henderson, secretary; Paul R. Boykin, assistant executive secretary.

Minutes

Dr. Buffmire reviewed the minutes and actions of the meetings of the committee that were held on July 9, 1961 and September 14, 1961. It was moved and carried that the minutes of the two meetings be approved as printed, and circulated among the membership.

Loan Grants

It was moved and carried that the official minutes of this meeting of the committee record the previous action of the committee by telephone poll approving a $1,500 loan to Gilbert M. Rodriquez on March 9, 1962.

Financial Report

Dr. Baldwin reviewed for the committee a report of the Valley National Bank and Trust Department. The report covered statements of transactions in the account from April 15, 1961 to April 15, 1962, including a statement of assets as of that date.

It was noted that the principal cash available for loan purposes as of April 15, 1962 was $8,594.21. Premiums for insurance for the extended period of coverage for each loan granted to the scheduled date of repayment would amount to approximately $2,550. The estimated balance left for loan purposes would be approximately $6,000.

Valley National Bank vs. AMAERF Assistance Status Report

On direction of Dr. Baldwin, the assistant executive secretary had contacted Mr. Dale Johnson of the Commercial Loan Department of the Valley National Bank. They had discussed the possibilities of that institution's interest in duplicating a program similar to AMAERF for The Arizona Medical Association, Inc.

The Valley National Bank had appeared extremely interested in being of assistance in such a program. It immediately instituted effort toward determining ways and means by which such a program might be instituted in the State of Arizona, complying with banking statutory requirements.

It was noted that a time estimate for determination of the feasibility of such program would approximate four to six weeks and that institution of such program would be unlikely before early 1963.

The committee directed the central office to maintain effort in this regard.

Review of Applications for Loans

It was apparent that the committee would not be in position to offer loans to prior recipients nor to initial applicants due to its financial position.

It was determined to correspond with Dr. Hugh H. Hussey Jr., president, AMAERF, expressing the hope that the AMAERF would be in position to grant loans to those medical students of record previously assisted by the Benevolent and Loan Fund Committee of The Arizona Medical Association, Inc. and offering information from the files of record of the applicants.

It was further determined to inform the candidates for such loans of the regrets of the committee in its inability to obtain funds to continue assistance to each of them, and to urge that their early request for assistance be directed to Dr. Hussey.

It was further determined to forward, until further notice, all requests for financial assis-

tance for medical students to AMAERF in Chicago.

It was moved by Dr. Henderson, seconded by Dr. Buffmire, and unanimously carried that the program as delineated above be prepared for release and, due to the apparent emergency, be forwarded to the Executive Committee of The Arizona Medical Association for its approval and immediate release.

Benevolent Fund Legal Review Report

The committee reviewed correspondence from Mr. Brooks Wilder from the legal firm of Snell & Wilmer to Mr. Bernard Hirsch, Director, Law Department of AMA on the possibility of the loss of tax exempt status of The Arizona Medical Association, Inc. through grants or loans from the Benevolent and Loan Fund to association members in financial distress.

The report was received and it was directed that it be followed. A final report is to be made to the committee at its next meeting.

CHARLES E. HENDERSON, M.D.
Secretary

BOARD OF MEDICAL EXAMINERS

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, April 21, 1962, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

ANKENBRANDT, Leo Jerome (GP), USAH Navajo Ordinance Depot, Flagstaff, Arizona.

ATHERTON, Leo George (ObG), 300 War Memorial Drive, Peoria, Illinois.

BARR, Robert Earl (GP), P.O. Box 38, Tilden, Nebraska.

BAYBA, Lewellyn Bringle (GP), Maricopa County General Hospital, Phoenix, Arizona.

BEELER, John Watson (R), 712 Hume Mansur Bldg., Indianapolis, Indiana.

BEN-ASHER, M. David (I), Madigan General Hospital, Tacoma 99, Washington.

BERNER, Clifford Leeland (GS), 109 N. Galt Ave., Louisville 6, Kentucky.

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ZEMER, James Cruse (Anes), Suite B-105, 4747 N. 16th St., Phoenix, Arizona.

COMMITTEE ON NATIONAL LEGISLATION

July 12, 1962

The Committee on National Legislation was appointed by the Board of Directors, February 4, 1962 and authorized to initiate an all out effort to enlist public support in opposition to the socialistic medical care legislation (HR 4222-King-Anderson Bill).

Because this type of legislation would not be in the best interest of the public's medical care, it therefore was our duty to so inform the people and provide them with the whole truth relative thereto.

Our action became imperative with the realization that some of the proponents of this legislation had based a large part of their sales

pitch upon ambiguity, emotionalism and half-truths without the full expression of their motives (extension of governmental bureaucratic control.)

Beset with our altruistic principles but without available funds, the board authorized a solicitation from our membership which to date has provided $5,115 which, added to over $2,000 contributed by your American Medical Association, made it possible for us to proceed.

John S. Turner and Associates (Public Relations) were employed to help formulate and direct the program. Mr. William Van Camp devoted his full time during the four months of intensive effort.

March 3, 1962 a very successful day, was spent in a Speakers' Bureau orientation workshop with over 100 in attendance — including members from 12 other interested organizations (nurses, farmers, cattlemen, lawyers, women's leagues, dentists, pharmacists, hospitals and insurance agents).

Our assistants included:

1. Mr. Darrell Coover, AMA, Director National Speakers' Bureau, Chicago, Illinois, former assistant to Senator Barry Goldwater.
2. Nicholas P. Dallis, M.D., author, Rex Morgan, M.D.; and Judge Parker, Scottsdale, Arizona.
3. William R. DeMougeot, Ph.D., professor of speech and debating coach, North Texas State University, Denton, Texas.
4. Mr. Richard Philleo, AMA field representative, Chicago, Illinois.
5. Bernard P. Harrison, legal and socio- economic division, AMA, Chicago, Illinois.
6. Mrs. Lee Ann Elliott, legislative associate, AMA, Chicago, Illinois.

Our message has been introduced to 3,000 organizations in Arizona. Formal discussions have been presented to over 120 organizations throughout the state with audiences varying from a dozen to over 300. Multitudes were reached through the press, TV and radio.

We have been extremely grateful to the news media for their extensive coverage and expression of our views. We are especially grateful to those publications that are not in sympathy with our beliefs for their factual reproduction of our statements.

Over 60,000 pieces of literature were distributed, mainly through the doctors' offices.

Our accomplishments as related to the final outcome have not been recorded. There are no scales to weigh our effectiveness. We can only at this time speak in generalities.

The Administration's bill to initiate socialized medicine (HR 4222) is still locked in the House Ways and Means Committee where it probably will remain. However, Senator Anderson has attached an amendment to the Welfare Bill (HR 10606).

The President, after his Madison Square rally, reluctantly admitted his mail was running about half and half. Life Magazine (June 5, 1962) labeled the present medical bill as a bad bill.

There is a belief, quite well supported, that our party voting Senator Hayden may deviate and oppose the present procedures and possibly the bill itself (Compulsory Health Insurance through Social Security).

The Gallup Poll (June, 1962) shows that in the last year there has been a gradual drop in the number of people who chose the social security approach to medical care for the aged from 67 per cent to only 48 per cent.

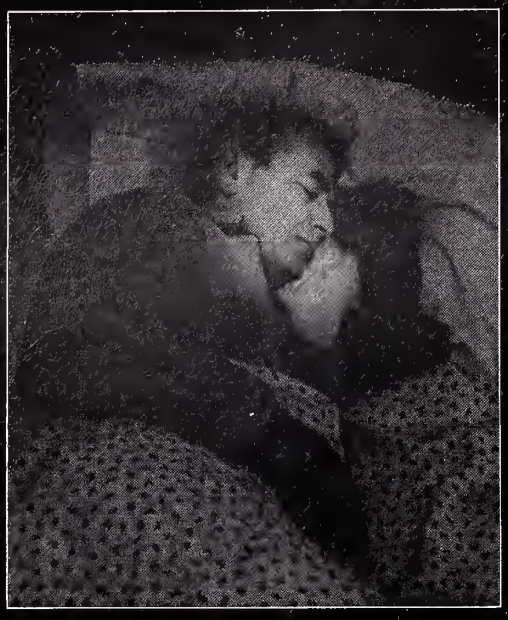
These changes in the thinking of the American public have not come about by accident, but rather due to the fact that whenever the citizens are given whole truth, they can then and only then determine their proper course.

To me it is incredible that such a transition in public opinion has come about in spite of the extreme pressures from the administration and other proponents. We can take some credit for our role in the public education and its effectiveness.

The strike of the doctors in Saskatchewan, Canada, has pinpointed the issue to the degree that the people, including the father of the child who died of meningitis, have blamed government interference rather than pointing a scornful finger at the doctors.

Your Committee wishes to thank the membership for its cooperation and for providing funds. We especially wish to thank the 45 speakers who gave over 120 talks without absence or last minute change or substitution. We are appreciative of the untiring assistance which we received from our local staff, the American Medical Association and the professional guidance of John S. Turner and Associates.

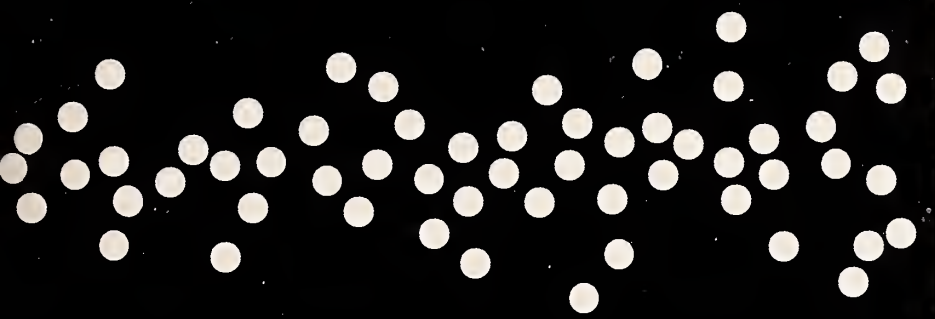
Leslie B. Smith, M.D.,
Chairman
Committee on National Legislation



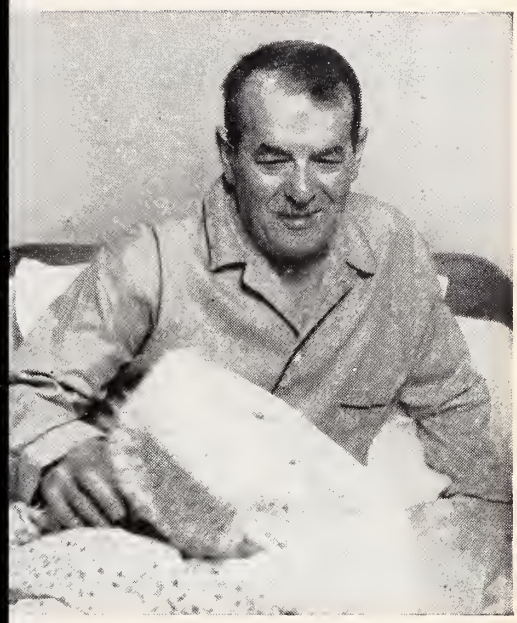
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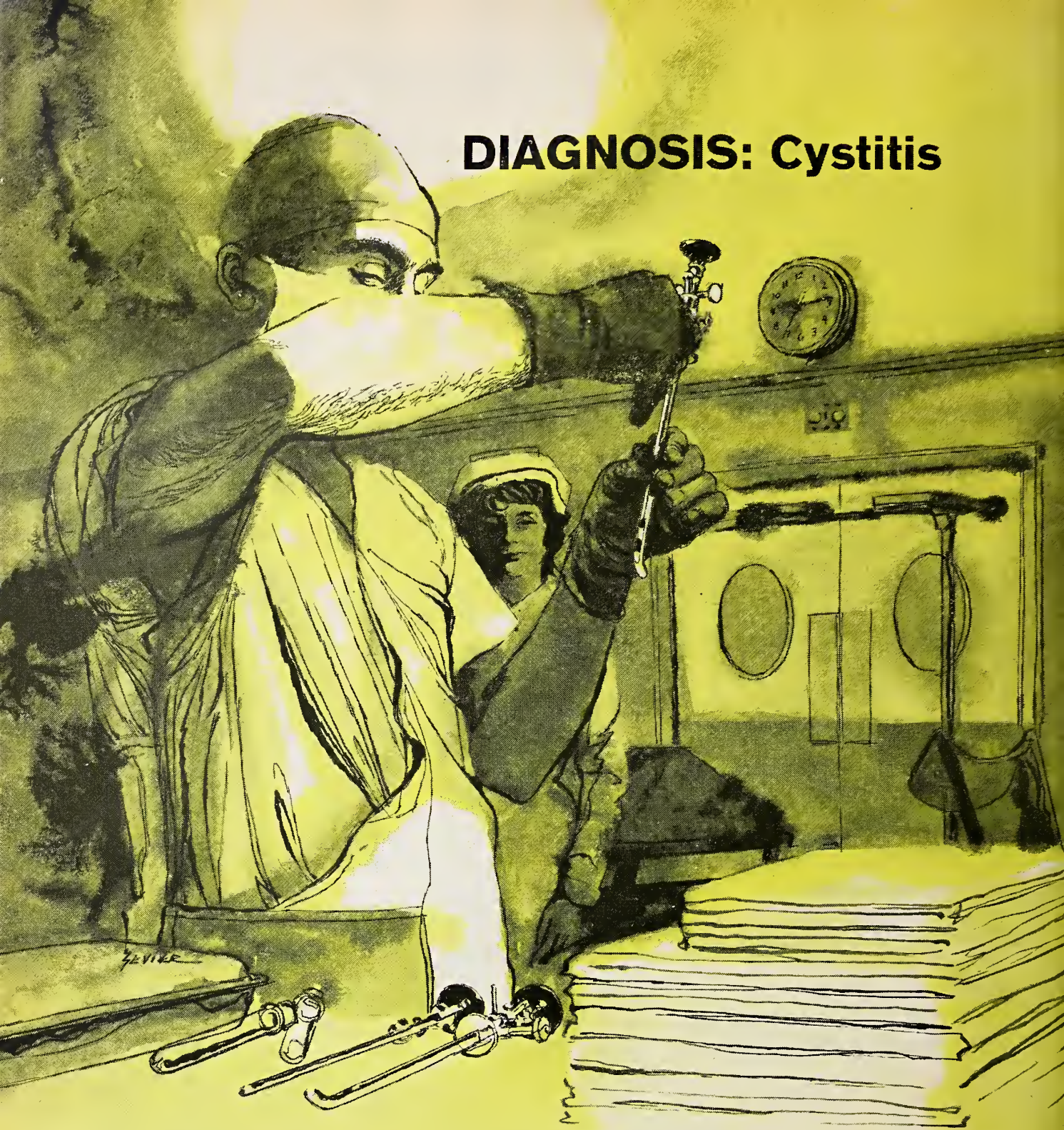
1. Kolodny, A.L.: Dis. Nerv. System *22*:151 (Mar.) 1961.

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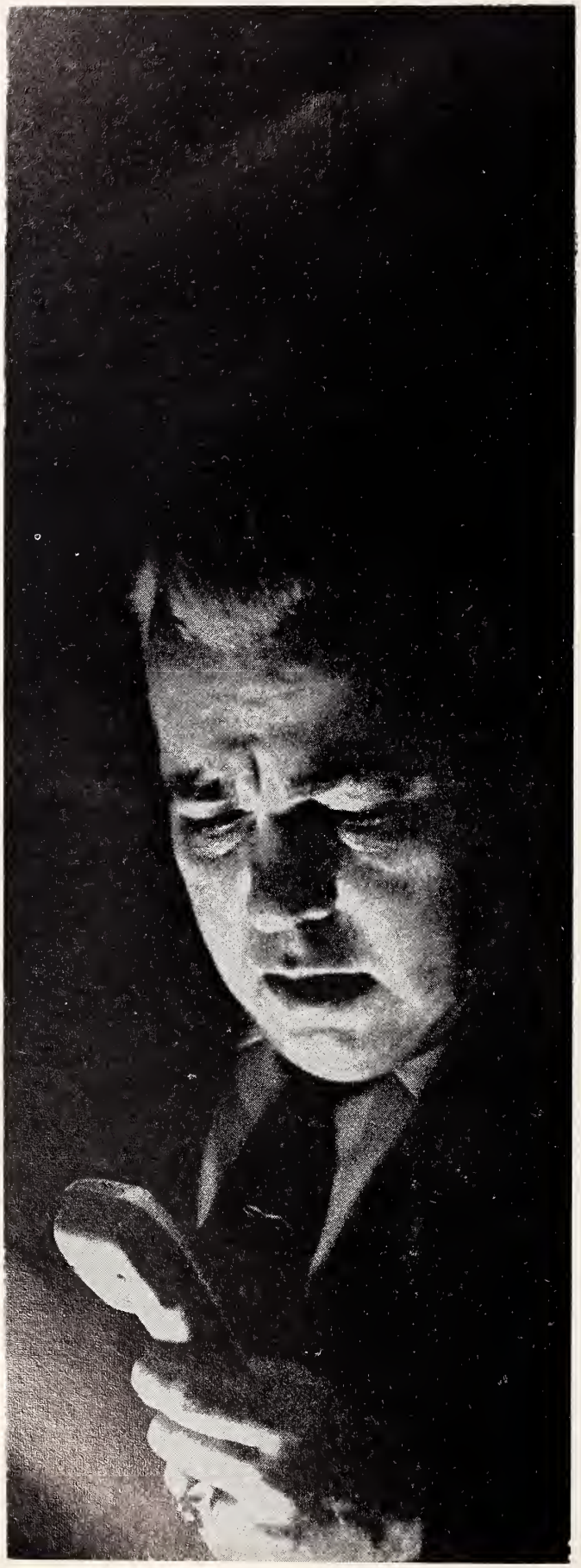
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*Schaefer, L. E.: Clin. Med. 8:1343, 1961.

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The Pathogenesis of Gastric and Duodenal Ulcer

Lester R. Dragstedt, M.D., Ph.D.

" . . . I have tried to indicate the usefulness of physiological studies on lower animals in the solution of clinical problems. In many instances the ideas derived from these studies have been verified and supported by experience with patients. It is my hope that they may lead to more accurate and conservative surgical treatment."

I am highly honored by this invitation to give the Mellon Lecture for 1961, and especially so in view of the distinguished men who have preceded me on this platform. I understand that I am the first surgeon to be so honored, but I hope not the last.

The problem of the cause of gastric and duodenal ulcer is a part of the more general question of the resistance of the gastrointestinal tract to the digestive action of its own secretions.

This was well stated in a thoughtful paper by Joseph Warren(15) almost seventy years ago: "The question is: Why do organisms which manifest such power of digesting and assimilating the material they require leave quite intact those organs or tissues where these processes go on so actively? Why does the stomach digest various albuminous substances so readily and yet fail to attack its own walls containing substantially the same material? Why do the intestines with their much more varied power of digestive action remain undisturbed and uninjured by this activity? Why does the pancreas secrete at least three vigorous ferments and yet work on unaffected by each and all of them?"

John Hunter interested himself in this problem and explained the resistance of the normal gastric wall to digestion on the basis of a vital principle in the following picturesque language: "If it were possible for an animal to live in the stomach of another animal, supposing digestion not to be going on in that stomach, it would then live while digestion was going on. For that animal would not be in the least dissolved because the living principle in the animal would prevent or counteract the digestive quality of the stomach.

"If this was not the case then we might readily suppose that even though the animal life was not immediately affected by the digestive power, yet at last it might be destroyed by the external and extreme parts of the animal being digested, and so the animal be obliged to die like a person with mortification. But that a living animal will not be so dissolved is every day proved by worms, maggots, or flies living in the stomach of many animals. And if it was a power that could act upon a part that had the living principle, as well as an acid can, then the stomach itself would certainly be dissolved.

Parallel in Digestion

"If one could conceive a man to put his hand into the stomach of a lion and hold it there without hindering the digestive powers, the hand would not in the least be digested. If the hand of a dead man was put in at the same time, whether separated or not from the body, that hand would be digested while the other would not."

From the time of Hunter many men have speculated and worked in this field and the idea has steadily gained headway that ulcers of the

From the Department of Surgery of the University of Florida, Gainesville, Florida.

Presented before the Phoenix Surgical Society, Casa Blanca Inn, Scottsdale, Arizona on February 13, 1962. Also presented at the University of Pittsburgh, Pittsburgh, Pennsylvania, as The Mellon Lecture, 1961.

The work on which this lecture is based has been aided by grants from the Division of Research Grants and Fellowships of the National Institutes of Health, United States Public Health Service.

stomach and duodenum are in some way due to the corrosive digestive action of the gastric content. The widely adopted term peptic ulcer is an expression of that view.

In health the stomach is not digested away and so it seemed necessary to postulate a local decrease in the resistance of the mucous membrane as a result of thrombosis or embolism (Virchow and Hauser) or some similar factor to account for ulceration. However, in spite of much effort very little evidence has been secured in support of this view.

Extensive ligation of the arteries to the stomach in dogs is well tolerated, and when the critical point is passed, acute necrosis of a part of the stomach results rather than ulceration. Similar observations have been made in man when interference with the blood supply to the stomach has occurred as a result of translocation of the stomach into the chest to re-establish continuity after removal of portions of the esophagus.

Factors are Variable

Ulcers usually develop in relatively young and otherwise healthy individuals with no evidence of arteriosclerosis of the gastric blood vessels or general nutritive impairment. I am persuaded that most ulcers are not due to a local decrease in resistance to digestion, although this factor may be of importance in a few cases. If it were the usual determining factor, local resection of ulcers should be a more successful operation than experience has shown it to be.

If we look at the other side of the equation, the evidence is more satisfactory. I should like to present for your consideration the concept that peptic ulcers are usually due to an abnormal increase in the corrosive and digestive properties of the gastric content as a result of hypersecretion of gastric juice. Furthermore, that duodenal ulcers are usually due to a hypersecretion of gastric juice of nervous origin and gastric ulcers are usually due to a hypersecretion of humoral or hormonal origin.

The corrosive properties of the gastric content are due chiefly to the pepsin hydrochloric acid of the gastric juice. The other material present, namely, swallowed food and saliva, regurgitated intestinal secretions, and mucus secreted by the gastric antrum, all serve to dilute and buffer the gastric juice and reduce its corrosive properties. When an excessive secretion of gastric juice occurs, the neutralizing effect of these protective substances will be gradually overcome until eventually the gastric content has approximately the same concentration of acid and pepsin as exists in pure gastric juice.

I believe the key to the ulcer problem was provided with the discovery that the pure secretion of the fundus of the stomach has the capacity to digest all living tissue including the mucosa of the duodenum and stomach itself. Previous injury is not required, but if this is present, the damaged area succumbs more readily than the neighboring mucosa.

A few representative experiments illustrate this point. Organs such as the spleen and kidney remain unaffected if transplanted into defects in the stomach of dogs where they are exposed to the usual gastric content. But they are promptly digested away if implanted into similar defects in Pavlov pouches where they are exposed to the pure undiluted fundus secretion.

Pure gastric juice from accessory stomach pouches in dogs promptly causes typical peptic ulcers if caused to drain into the jejunum, ileum, or colon. The totally isolated stomach of dogs devoid of vagus innervation but with intact blood supply secretes very little gastric juice and usually remains free of ulcers. If the antrum from such an isolated stomach is transplanted into the colon, a marked hypersecretion of gastric juice occurs and typical gastric ulcers promptly appear in the isolated pouch.

Secretions Noted

The evidence that duodenal ulcers are usually due to a hypersecretion of gastric juices of nervous origin may be listed as follows:

If care is taken to make a nearly quantitative aspiration of the gastric content during a 12 hour period, free hydrochloric acid in the nocturnal secretion of duodenal ulcer patients is from three to twenty times as great as that secreted by normal people under the same conditions.

In our experience normal adults put out between 15 and 25 mEq. of free hydrochloric acid in the nocturnal secretion when there is no food in the upper gastrointestinal tract and the patient is shielded from the sight, odor, or taste of food. Under similar conditions 1,000 duodenal ulcer patients on whom we have careful meas-

urements secreted from 60 to 350 mEq. of acid. This fasting hypersecretion is undoubtedly significant because, if a hypersecretion of the same degree is reproduced in experimental animals, ulcers in the duodenum regularly develop.

This demonstration was first made by Hay, Varco, Code and Wangensteen when they produced a sustained hypersecretion of gastric juice and typical peptic ulcers in dogs and other experimental animals by implanting pellets of histamine and beeswax into the subcutaneous tissues.

The disappearance of the hypersecretion in duodenal ulcer pataients during sleep and even after the administration of sedative drugs suggests that the hyperactivity has become established in some of the lower ganglia. If this is true, the possibility of affecting this hypersecretion by psychotherapy seems rather remote although the attempt ought to be made.

It is interesting that division of one vagus nerve does not reduce the fasting secretion. This may continue even if both main trunks of the vagus supply to the stomach have been divided and a relatively small branch has been left undisturbed. That such a small vagus branch can activate the entire glandular mechanism of the stomach indicates that the connection between the vagus endings and the gastric glands is not simple and direct.

Transmission of Impulse

It may be that the impulse is transmitted from the vagus nerves to the submucous plexus of Meissner and from the plexus to the glands. The intimate anatomical arrangement of nerve filaments from the plexus and the gland cells supports this possibility. At all events the necessity for division of all or nearly all of the vagus branches to the stomach is well established. There is no doubt that many failures in the surgical treatment of duodenal ulcer have been due to incomplete vagotomy.

The beneficial effect that complete gastric vagotomy exerts on the healing of duodenal ulcers constitutes the final and perhaps best evidence that these lesions are due to a hypersecretion of gastric juice of nervous origin. This fact has usually been lost sight of in the controversy as to whether vagotomy or subtotal gastric resection is the more effective operation.

Many thousands of duodenal ulcer patients in all parts of the world have been cured of their disease by the vagotomy operation. In our own experience of over 1,100 cases, division of the vagus nerves to the stomach regularly abolishes the abnormal fasting hypersecretion. If an adequate drainage operation has been done, the ulcers usually heal and remain healed.

It is true that about 10 per cent of our patients have failed to get a good result. But if these cases are scrutinized, usually some reason for the failure is apparent. Most of them occurred in our early experience when the necessity for dividing all of the vagus nerves to the stomach was not fully appreciated and the fact that stasis of food in the antrum of the stomach could cause a prolonged hypersecretion of gastric juice of humoral origin was not known.

Hormonal Influences

The concept that peptic ulcers are usually due to hypersecretion rather than to a local decrease in the resistance of the mucosa raised the question that this hypersecretion in some patients might be due to an exaggeration of the hormonal mechanism for stimulation rather than to the vagus nerves.

Pavlov recognized that a secretion of gastric juice occurred on the ingestion of food even after the vagus nerves to the stomach had been divided. He accounted for this on the basis of local nervous reflexes.

Edkins postulated that this secretion arose as a result of stimulation of the gastric glands by a hormone which he designated as gastrin. He stated it was formed in the mucous membrane of the antrum of the stomach on contact with food or the primary products of digestion and, subsequently, liberated into the blood stream.

This is one of the most remarkable guesses in the history of gastrointestinal physiology. For it must be admitted, as Ivy and Carlson have pointed out, that the experimental evidence provided by Edkins was scanty and inconclusive.

It is likely that this gastrin theory was suggested by the previously discovered pancreatic secretin of Bayliss and Starling. My associates and I became convinced of the validity of Edkins's theory when we found that excision or transplantation of the antrum of the stomach to the abdominal wall markedly reduced the secretion of gastric juices from the vagus denervated stomach. This secretion returned to its previous level when the transplanted antrum was again implanted into the duodenum.

A further study of the physiology of the gastric antrum by the use of isolated antrum pouches indicated that the application of food to the antrum mucosa would, indeed, stimulate the secretion of gastric juice by the fundus of the stomach as Edkins had postulated. But this occurred only if the food was neutral or at most faintly acid in reaction. The application of acid or acid food to the antrum mucosa immediately produced a cessation of this antrum hormonal function. This finding indicates that the normal stomach possesses in the antrum a mechanism both for initiating and for stopping the secretion of gastric juice.

Food and Reflexes

In the normal individual the fasting or continuous secretion is markedly augmented by the sight, odor, or taste of food by means of conditioned and unconditioned reflexes mediated by the vagus nerves. Food promptly enters the stomach where gastric peristalsis is induced. The food is carried to the antrum where it comes in contact with the mucosa. Gastrin is then liberated and the humoral phase of stimulation provides for a secretion of gastric juice until the acidity of the gastric content approaches a pH of 2.5. At about this concentration of acid, further release of gastrin is inhibited. Secretion stops presumably when sufficient gastric juice has been produced for the digestion of the meal.

Tension within the antrum, such as that produced by peristalsis, has been found to be quite as effective a method of stimulation of antrum function as is contact with food. The previous application of solutions of procaine or of atropine sulfate to the antrum mucosa blocks completely the release of gastrin either by contact with food or the development of tension within the antrum. This must be due to some interference with the mechanism of gastrin release since the similar application of these solutions to the mucosa of the fundus causes no such inhibition. The antrum of the stomach is an important endocrine organ and much more work is required before the details of its function are clearly established.

One discovery that has proved fruitful is that transplantation of the antrum of the stomach into the transverse colon as a diverticulum produces a sustained hypersecretion of gastric juice in dogs and typical peptic ulcer formation.

This indicates that ulceration due to a hypersecretion of gastric juice of humoral origin is more than a theoretical possibility although it must be admitted that a duplication of this experiment could occur, but rarely in human pathology. It seems probable that the hypersecretion of gastric juice induced by transplantation of the antrum into the colon is dependent partly on stimulation of the antrum by peristalsis and partly to the absence of acid inhibition of antrum function.

The experimental evidence available at the present time suggests that a hypersecretion of gastric juice of humoral origin in man could occur as a result of the hypermotility and hypertonicity of the stomach in the presence of pyloric stenosis. Or this could occur as a result of prolonged contact of food with the mucosa of the pyloric antrum brought about either as a result of mechanical obstruction or deficient gastric peristalsis. There is evidence that both of these factors are present in many gastric ulcer patients.

Although it had been previously noted that patients with long standing duodenal ulcers with pyloric stenosis and food retention are apt to develop secondary gastric ulcers, the studies of Huber and Huntington are especially convincing.

Roentgenogram Studies

In beautiful roentgenograms these workers demonstrated the appearance of large gastric ulcers in patients where previous duodenal ulcers had caused pyloric stenosis with marked retention of food in the stomach. Pyloric stenosis should cause gastric hypermotility, inereased tension within the antrum, and also prolonged contact of the antrum mucosa with stimulating chemicals in the food.

We have recently secured evidence that these factors actually provoke a hypersecretion of gastric juice of humoral origin in some experimental studies conducted with my associates, Rigler, Oberheiman, Brasher, and Landor. Experimental pyloric stenosis in dogs with vagus denervated Heidenhain pouches produced sustained hypersecretion from the pouch and in one case a typical gastric ulcer in the main stomach.

It is probable that not more than 20 per cent of gastric ulcers develop in patients with pyloric stenosis due to a previous duodenal ulcer. For the remainder, a hypersecretion of humoral ori-

gin must be dependent upon other factors than pyloric stenosis. In this connection an experiment performed in our laboratory and also independently by Storer and his associates is of special interest.

Heidenheim Pouches

Heidenhain pouches devoid of vagus innervation were prepared in dogs. Their secretory characteristics were carefully measured during a controlled period. The vagus nerves were then divided along the lower esophagus whereupon the output of gastric juice from the Heidenhain pouch was profoundly increased. This increase in the humoral mechanism of secretion was due to stasis of food in the stomach as a result of decreased gastric tonus and motility caused by the vagotomy since it did not occur if a previous gastroenterostomy had been made in the lower part of the stomach or if the antrum had been excised.

It is thus evident that delayed gastric emptying of functional origin can cause a hypersecretion of gastric juice presumably as a result of prolonged contact of food with the antrum mucosa. Although all sorts of gastric examinations have been made on ulcer patients, we still do not have sufficient data on the frequency and extent of stasis in gastric ulcer patients independent of obstruction at the pylorus combined with continuing examinations of the concentration of acid and pepsin in the gastric content so long as food is present. Data of this type are clearly important both for the adequate care of the patient and for a further study of the disease.

The idea that gastric ulcers are usually due to a hypersecretion of gastric juice of humoral origin is in harmony with many previous observations. Early in our work we found that gastric vagotomy was not so effective in the treatment of gastric ulcer as we had found it to be in duodenal ulcer patients.

When vagotomy alone was done in the treatment of duodenal ulcer, stasis was not infrequent. Five patients developed gastric ulcers as a secondary complication after periods of two to five years although the duodenal ulcers remained healed and the nocturnal gastric secretion was below the normal level. The subsequent employment of pyloroplasty or gastroenterostomy to prevent stasis of food in the antrum when vagotomy is done has very largely eliminated this complication.

Ihre has called attention to the fact that duodenal ulcers occur usually in individuals subjected to unusual and prolonged stress and strain, but this is not so evident in patients with gastric ulcers. Gastric ulcers were found to occur a decade later and were associated with irregular eating habits. In many series of duodenal ulcer patients, males predominate in a ratio of 5 or even 10 to 1. In gastric ulcer the incidence of the two sexes is more nearly the same. It is in the response to gastric surgery that the differences between gastric and duodenal ulcers appear most striking.

When gastric resection was first employed, only the lower part of the stomach, including the antrum and possibly a small portion of the body, was removed. When this low resection was performed for duodenal ulcer patients, marginal ulceration was not infrequent. But it rarely or never occurred when this operation was done for gastric ulcer.

Here again it may be suggested that the low resection with removal of the antrum abolishes the cause of the hypersecretion in gastric ulcer patients and so they remain well. The nervous phase of secretion, however, persists after removal of the antrum and so a new ulcer forms when resection is done in duodenal ulcer patients.

The concept that gastric ulcer is due to a hypersecretion of gastric juice due to antrum hyperfunction from stasis of food also explains the puzzling fact that excision of the antrum, as in the Kelling-Madlener operation, usually causes the healing of a juxtaesophageal gastric ulcer which has been left in situ.

In Conclusion

I have tried to indicate the usefulness of physiological studies on lower animals in the solution of clinical problems. In many instances the ideas derived from these studies have been verified and supported by experience with patients. It is my hope that they may lead to more accurate and conservative surgical treatment.

I should like, also, to support the claim of Pavlov that the method of surgery is a valid and useful technique for the solution of problems of a more fundamental scientific nature.

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Trends in the Treatment of Tuberculosis, Including Chemotherapy

Julius L. Wilson, M.D.

A review of the modern trends in the treatment of tuberculosis with accepted chemotherapeutic agents is made. Surgical therapy is discussed as well as ambulatory treatment and its effect on reducing hospital admissions. Patients requiring continued or additional treatment are discussed. The problem of prophylactic therapy is briefly analyzed, as are the so-called questionably pathogenic organisms Even though great strides have been made our continued awareness of the TB problem is firmly emphasized.

The advances made in the field of respiratory diseases including asthma, bronchitis, emphysema and various pneumonias as well as carcinoma of the lung are briefly discussed. What to look for and hope for in the future management of these disease entities is outlined.

We have had gradual trends in the treatment of tuberculosis over many years. In fact one could go back to Brehmer and the first sanatorium in Germany just 103 years ago. From that time until recently we have had a series of rather gradual changes in the treatment of tuberculosis. But since 1945-50 the treatment of tuberculosis has been revolutionized.

Perhaps it is a good time to review this revolution because it has been ten years since isoniazid was introduced. We have had nine years to establish basic chemotherapy of tuberculosis and to change chemotherapy to being the central part about which the rest of the treatment of tuberculosis revolves.

The first important trend that has resulted from this introduction of effective chemotherapy with isoniazid used in conjunction with other drugs has been that toward the ambulant treatment of tuberculosis. This is really not quite as startling as it seems on the surface. When we had 110,000 beds for tuberculosis in the United States 15 years ago, those hospitals often had a waiting list of a year or 18 months and a high irregular discharge rate.

At no time did we have anywhere near all of the active tuberculosis patients in hospitals. There was always a large amount of ambulant treatment because we never could attain the goal of having enough beds to treat all the active patients in hospitals.

Ambulatory treatment is nothing new. We all bowed down to bed rest as the most important element in treating tuberculosis. But if we took the average sanatorium of 300 beds in those days it would have an infirmary in which ten or fifteen per cent of the patients would be on bed rest. The other 85 to 90 per cent of the patients would be getting up and going to meals. Often they would be given walking exercise — 15 minute walks twice a day, within a few weeks. They were young individuals of both sexes — well fed, well rested and in a lovely mountain environment.

Bed Rest

Today we have come a long way from the idea that rest was the central method of treating, and other forms of treatment were ancillary to it. Bed rest is still quite necessary of course for the patient who is febrile. And the patient who is spitting blood is put to bed. So we still use bed rest for the symptomatic patient.

Bed rest in effect is like the hour hand on the electric clock — it moves along so slowly that

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when you look at that swift red second hand which we might call chemotherapy, it is very difficult to see that the hour hand moves at all.

The effect of this trend to ambulant treatment has been to bring our means (our tuberculosis beds) up to our needs by cutting the duration of treatment to one-half or one-third. If the average hospital stay was 18 months ten years ago, it is now nine months. Whatever the number of beds in a community, you treat twice as many patients. The thing to look at in a hospital report is not the capacity but how many patients were treated in a year? On this basis, some 60,000 beds in the United States probably provide for more patients per annum today than did 110,000 beds in 1950.

Private Care

We often hear that there is a vastly increased number of patients being treated by private praetitioners today. I have not seen any really good data on this, and I am very skeptical about it. If one starts with the well observed fact that 95 per cent or more of tuberculosis patients cannot afford long term care and must be charges of the community in some way, one sees that this problem is small. As always, the small proportion of private care is still there and is still small. How it is in the country and states like Iowa, Nebraska, Texas I can't say. But in our big cities about six per cent of the patients are under private care. The other 94 per cent are under the charge of the city.

It is a simple matter of mathematics to take the number of patients reported as new patients in the United States last year (ten per cent of them are being reported by private physieians) and to divide this into the number of doctors practieing in the United States. It comes to one patient to 32 M.D.'s. It represents an average for all physicians in the United States. It is not a statement that the average chest physician or the average internist sees a patient once in 32 or 16 years.

This is important in regard to postgraduate or continuing education, because, if a man is not going to see tuberculosis oftener than once in 32 years, he is not interested in perfecting his knowledge of the diagnosis and treatment of tuberculosis. He is not really very interested until he has a case. And this is one of our difficulties in continuing the doctor's awareness of tuberculosis as a possibility in the differential diagnosis.

The next trend is the devaluation of collapse therapy. It is amazing how far we have moved over away from collapse therapy in a decade. However we still have patients who are treatment failures. In this area, where we have to deal with a patient with a positive sputum and drug resistant organisms, surgical collapse therapy may still have a very distinct place.

Most surprising is the relatively recent trend away from resection. Ten years ago or less resection of the lung was the big thing. But it got into this dilemma: The patient who had cavity and a persistently positive sputum also had resistant organisms and from the surgical point of view ran a high risk of complications. But the patient who had a residual nodule, a cavity with a constantly negative sputum, was a good case to operate on.

But operating on these did not make much difference in the subsequent course. There is a very low relapse rate with these so-called "open negatives," and an even smaller relapse rate with the healed residual. Whether that patient did better after removing all small caseous foci or not depended on whether he had to get an annual chest X-ray to hold a job or not. If he didn't have to get an X-ray, he did just as well without the operation.

Drugs in Chemotherapy

In chemotherapy there have been no very effective new drugs. Thioamide or Ethionamide introdueed a year ago is a moderately effective drug. A new drug which is under trial now called Ethambutol seems to be a possible companion to isoniazid, being taken by mouth and being fairly effective in a smaller dose than PAS.

Hydrostreptomycin is out because it produces progressive deafness and does not have a distinct advantage over streptomycin. Streptomycin is much less used. And when used is should be used as a daily dose early in the course of treatment and then discontinued so that it can be held in reserve for any subsequent complications.

High dosage isoniazid has had great popularity. It was based upon theory, isoniazid being acetylated rapidly in the body of many individuals. After long and extensive trials by the VA-Armed Forces, the net result is that the theory is fine, but in actual practice the standard

dose of 300 mg. per day for the average patient of 150 pounds is as effective as a high dosage.

It is interesting that the one group still maintaining that high dosage is important for treatment of tuberculosis are the pediatricians. The fact that the child tolerates a high dose better than an adult, and one had better be on the safe side, is not a sound scientific basis for high dose therapy.

Isoniazid alone is of course very effective as shown by the Public Health Service in comparative studies on minimal and moderately advanced tuberculosis with no cavitation. The trouble here is that when we get a new case with a positive sputum on smear, even though we cannot see any cavity in the X-ray, we must assume that the conditions of cavity are there. One would be much safer to give two drugs to all these cases at the beginning of treatment.

This is quite different from the treatment of a child or infant with active primary tuberculosis, particularly when one cannot recover any organisms. Isoniazid alone then may have a very definite place in prolonging treatment in such patients for a second or third year after the lesion is quiescent.

Preventive Treatment

One of the biggest trends of course in the treatment of tuberculosis within the last year or two has been the trend to extend treatment to include many more people than simply those with an active pulmonary tuberculosis — in other words, to include preventive treatment of the child or the infant who is infected. The chemotherapy of tuberculosis has been extended definitely to infants under three with a positive tuberculin to prevent development of fatal forms of tuberculosis.

The same reasoning can be applied to individuals who have converted from a negative to a positive tuberculin test within the previous twelve months. As shown by Walgren and others, there is a time schedule in which the danger of progression to miliary tuberculosis, meningitis, pleural effusion and various other forms is highly likely within the first year after the infection.

Patients who now have inactive tuberculosis but whose previous treatment did not include 18 months or more on two drugs should probably be retreated with effective chemotherapy. This is based on the observation that the patients who have been treated with isoniazid and then another drug for at least 18 months have a very low relapse rate. Theoretically the patient who now has a chest X-ray showing a lot of residuals and who has never had chemotherapy is still subject to the relapse rate experienced before isoniazid was introduced.

While it is still impossible to have firm statistical basis for retreating these old cases of tuberculosis with a year of chemotherapy, they do not have to be hospitalized.

Another Group

There is another group which should be treated, although this is more controversial and that is patients who are picked up in a survey and who are put in the cateory of pulmonary tuberculosis of undetermined activity, probably active. There is no bacteriological proof that this is tuberculosis and that it is active. There is no series of chest films to show that the lesion is progressive or that it is forming a cavity.

Should one wait for the reports on cultures to come back from the laboratory, or should one treat him now? After specimens have been sent to the laboratory, medical judgment based on the individual case should determine whether the patient should be started on treatment. There is less hazard in starting some of these people before necrosis goes so far and shells out a cavity than there is in waiting, and it is no difficulty to cut off the treatment after a month or two if the conclusion is that this is a case of histoplasmosis.

There are certain other groups to whom this prophylactic treatment has extended. All patients who have a positive tuberculin or old X-ray evidence of pulmonary lesions and who are taking prolonged cortico-steroid treatment for any other purpose should certainly be under a protective daily dosage of isoniazid.

Patients who have severe diabetes or patients who have a nodular form of silicosis and positive tuberculin, patients who have had gastric resections and have evidence of old, apparently healed tuberculosis in the lungs should probably have a daily isoniazid. It may take as long as five years after the gastric resection before they appear in our tuberculosis institutions. There may be other complicating conditions which tend to increase the liability of tuberculosis in which we should consider giving a course of isoniazid.

Another trend in the treament of tuberculosis has been the place which has been found for steroid therapy. It is apparently quite important and valuable to give steroids plus chemotherapy for cases of tuberculosis pneumonia, miliary tuberculosis, and meningeal tuberculosis. The dramatic effect upon the temperature and symptoms is so great that it is apt to mislead us as to exactly what else we have accomplished with the steroids. There is also some evidence accumulating that with tuberculous pleurisy with effusion and tuberculous adenitis the steroids may be of some help in favoring early resolution and more effective treatment.

When we had a very high initial case fatality rate, for instance at the Philadelphia General Hospital in 1947, 50 per cent of the patients died within a year of the admission, we did not accumulate many "treatment failures." But today with the mortality reduced to less than ten per cent of those coming in with new active tuberculosis, we are creating through our failures and through the natural human failings of the patient a considerable body of people who have chronic tuberculosis.

Results with Control

The comparatively regular success of the people who treat patients with tuberculosis in mental hospitals and in penal institutions puts us to shame. They have the patients completely under control. And in the mental institutions they can get a wife to consent to having the lung removed rather than having to ask the man himself to consent. Our problem is a difficult one here because it involves the control of human beings in a society where we like to feel that people are free rather than ordered around.

The trend is toward more effective use of shifting combinations of drugs, some of the secondary drugs, and of persuasion of many of these patients to have surgery. In this particular field surgery offers perhaps its greatest contribution to successful treatment. Successful treatment means bacteriological success from a public health point of view, and success in getting the person back on his feet and able to earn his living.

One of the trends which is striking is the result of better bacteriological laboratory work. As we have come to depend more and more on cultures of the sputum, cultures of the bronchial secretions, cultures of the gastric secretions, two things have happened.

One is that we have begun to recognize the increasing incidence of organisms resistant to the three major drugs. This is a serious and growing problem because again it represents a loophole in our methods of control. The last VA study showed somewhat over five per cent of such new cases coming in with infections resistant to one or more of these drugs. In some foreign places, 20 to 25 per cent of new patients have tuberculosis as a result of infection with these resistant organisms.

Just as the staphylococcus in one form has escaped and made an end run around the broad spectrum antibiotics producing serious infections in our hospitals, the tubercle bacillus threatens to do the same thing. This underlines the importance of thorough initial treatment of every case because this development of resistance obviously results from a failure in the treatment of the patient when first diagnosed.

The other result from all these cultures used in diagnosing tuberculosis and in following the patients in the institutions is the uncovering of this whole field of so-called unclassified mycobacteria. When tuberculosis in the human variety was more or less ubiquitous and everybody got infected with it, the finding of these organisms was just a freak. But with the retreat of tuberculosis as a universal infection and with the use of more cultures these other organisms appear.

Question of Origin

They bring up a very difficult point from the public health viewpoint: "Are these organisms transmitted from one individual to another?" If they are not and if they are geographically located in relation to soil or another vector, one has little justification in isolating them in a tuberculosis hospital and reporting these as cases of tuberculosis.

Although they lump all these organims together in one category, unclassified, there is a great difference between the photochromes in Group one and the scotochromes in Group two. There is sufficient evidence that the photochromes and the Group three of Runyon do produce disease in some individuals.

As far as treatment is concerned, these organisms generally have a certain degree of native resistance to our drugs. And while they do yield

to treatment they do not show the dramatic and conclusive effects that we get in treating pulmonary tuberculosis due to the tubercle bacillus.

The best treatment, when they do develop active open lesions with cavitation, is a combination of drug therapy and surgical resection. This cuts the Gordian knot in effect. With negative sputum they can be sent home.

The proportion of these patients in the total population who have active disease is not very large. Even in Georgia where they have uncovered perhaps the largest number of these Battey organisms, the proportion is four per cent of their admissions. A high proportion of the people in central or south Georgia have the infection with this organism, whereas the number that actually turns up at the sanitorium with this organism is relatively small. Outside of the institutions where they are picked up they do not present a very large problem in medicine.

This whole shifting matter of treatment is covered in its various aspects by a series of statements that are put out by the Therapy Committee of the American Thoracic Society.

I want to emphasize that whereas we used to expect high mortality from tuberculosis, we should not be satisfied today with anything less than 95 per cent recovery. Any system of TB treatment which is batting less than about 95 per cent on new cases is a system that is not functioning to its full capacity with our present day equipment and armentarium.

Objective Cited

We should have the objective of having no open positive cases at large in the community except under very special and strict circumstances of isolation from children and from other individuals who may be susceptible. This should be our goal, and nothing less.

Finally we must beware of too much dogmatism. All we have to do is to think back a few years to the reliance on climate. And then this matter of bed rest. How convinced we were that the patient had to rest in bed, the use of the bed pan for months, the daily bath in bed, the whole ritual of bed treatment.

The hospital still has tremendous values to give to the patient in starting him off right: rest, change from the stresses and strains that helped to break him down, educating him and isolating him while he is contagious, and getting his treatment started properly. But bed rest is one of the least of these things that the hospitals has to offer today.

From 1890 to 1900 tuberculin treatment had just as much faith in it as chemotherapy has today. With no VA-Armed Forces comparative studies they had to wait until they had killed some people before they backed away from that one.

Collapse therapy — Just think how recently we were devoted to the proposition that if you can get us the patient early enough and let us collapse his lung one way or another, closing that cavity, he will get well. One of the first effects of chemotherapy was to permit the surgeon to go into the thorax proximal to the pleura with impunity in the face of a tuberculous infection. The resulting overenthusiasm has died down now to a firm basis for the surgery that is done.

In the Future

What will be the next trend after chemotherapy? Tuberculosis itself will be with us as an infection, potentially as a producer of serious disease, for two generations, or 70 years, so that the medical profession had better still study it.

It cannot be wiped out as typhoid could be by pure water, pure milk, pure food and a certain amount of vaccination because it remains in the lymph nodes, the spleen, the bone marrow of millions of citizens in this country. This is now all one little world with tuberculous infection in possibly a billion people outside of this country, which is a pretty big reservoir.

(Following is summary by Dr. Julius L. Wilson of his paper presented at the Arizona Thoracic Society's Symposium on Diseases of the Chest, September 15, 1961 — Ed.)

NEW HORIZONS IN RESPIRATORY DISEASE SUMMARY

Horizons are visible from here and new because of our rapid advances in the field of respiratory disease. Rare new diseases are overshadowed by the big disabling and killing diseases on the increase or holding their own.

Asthma — chronic bronchitis — emphysema, the chronic non-specifie lung disease of the British, is a condition in search of definitions

and of a name. Agreement between specialties and English-speaking writers must preceed classification and statistical studies. A definition of emphysema based upon pathology necessitates the creation of a new component of the group, overinflation. Immunology, physiology and epidemiology are charting new roads toward better treatment and some preventive measures.

Possible Causes

Carcinoma of the lung, like emphysema, is on the increase, possibly due to some of the same secondary causes such as smoking, air pollution, heredity and hormones. Recognition of such causes necessitates choice between public education against smoking and air pollution and direct measures to remove carcinogens from the smoke and smog. Discouragement with curative measures emphasizes need for prevention. New direction of virologic studies may be a mirage, but may also lead to cause and prevention.

Infections continue to be important lung diseases in spite of antimicrobial triumphs. Viral infections such as common cold, influenza and pneumonias present complex problems in prevention. But wholly new approaches are being laid out from interferons to air purification. Development of resistant organisms has imperilled the success of chemotherapy against pneumonia and tuberculosis.

Diminishing returns have set in with an aging population, alcoholism, delayed diagnosis, and other human factors. Unclassified mycobacteria have been unveiled as a cause of much lung disease by the retreat of tuberculosis and the general use of cultures for diagnosis. Mode of transmission and prevention still are unknown. Mycoses are now well demarcated and new drugs are appearing to treat the previously fatal forms of histoplasmosis, coccidioidomycosis, blastomycosis.

In other conditions new horizons necessitate constant re-education of every internist. Theories of the causation of silicosis are changing. The pneumoconiosis of coal workers becomes a major industrial disease. Sarcoidosis constantly presents new angles. Cystic fibrosis has expanded through mucoviscidosis to a disease possibly underlying many adult conditions. Embolism, thrombosis and hypertension of the pulmonary circulation are recognized and treated more readily by new methods. The rare must not divert our diagnostic attention from the less exotic big four: Emphysema, cancer, pneumonia and tuberculosis.

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Fred J. Ansfield, M.D.

Associate Professor of Surgery, University of Wisconsin Medical School
Cancer Research Hospital

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Meigs' Syndrome

Report of a Case and Review of the Literature

Leo Schnur, M.D.
Kenneth B. Brilhart, M.D.
Paul Schnur, M.D.

1962 AWARD WINNING PAPER

This paper presents a discussion of the clinical triad: ovarian tumor, ascites and hydrothorax, including an unusual case report.

An academic presentation of Meigs' syndrome and pseudo-Meigs' syndrome and the theories proposed to explain the unusual features of this medical oddity are given.

INTRODUCTION

In 1937, Meigs and Cass(1) reported seven cases of fibroma of the ovary with ascites and hydrothorax cured by removal of the fibroma. This group of findings was first called Meigs' syndrome(2) by Rhoads and Terrell in a report later that same year.

Meigs' 1937 report, however, was not the first to appear on this subject. In an extensive review of the literature in 1954,(3) he pointed out that Spiegelberg(4) in 1866 first reported a case of this syndrome that was discovered at autopsy. Cullingworth,(5) who is often credited for the first description of the syndrome, reported a case in 1879 in a patient who died. Since these patients were not operated upon, one of the essential features of the syndrome — the fact that removal of the fibroma cures the hydrothorax — could not be determined.

Demons(6) in 1887 reported nine patients with cysts of the ovary whose ascites and hydrothorax was cured by removal of the cysts. These patients, according to present day concepts, did not have Meigs' syndrome but pseudo-Meigs' syndrome for, in the true Meigs' syndrome, the tumor must be a fibroma or a fibroma like tumor. All other pelvic tumors associated with ascites and hydrothorax that clear by removal of the tumor are now called by Dr. Meigs and others(7, 8) pseudo-Meigs' syndrome.

Some writers(9, 10, 11, 12) believe that all pelvic tumors, benign or malignant, solid or cystic, associated with ascites and hydrothorax that clear after removal of the tumor, should be called Meigs' syndrome. Their reason for this arises from the fact that all these patients may be cured by removal of the tumor whereas, if not treated surgically because of a diagnosis of inoperable metastasic carcinoma, they will die of a curable condition.

Meigs' reason for separating these patients into a Meigs' syndrome and a pseudo-Meigs' syndrome is based on the fact that ascites and hydrothorax are found more commonly with fibroma than with other pelvic tumors.

Cases Reviewed

Tait(13) in 1892 reported a case of the syndrome and Demons,(14, 15) in papers published in 1902 and 1903, reported three cases of Meigs' syndrome. After Demon's paper in 1903, there was a period of about thirty-five years when nothing appeared in the literature. The first comprehensive report was by Meigs and Cass(1) in 1937. Since this report, there has been increased interest shown in the subject in both American and European literature.

Two articles in 1954, both by Meigs, are worthy of note. In the first one, 'Fibroma of the Ovary with Ascites and Hydrothorax — Meigs' Syndrome,"(3) Dr. Meigs reviewed all the American literature and some of the French, German and Italian and listed all the cases he found that he considered true Meigs' syndrome. Total number up to that time, that he considered

Third annual award paper, read at the annual meeting of The Arizona Medical Association, Inc., Safari Hotel, Scottsdale, Arizona, April 27, 1962.

as meeting the definition of the true syndrome, was eighty-four.

In another report(16) later the same year, entitled "Pelvic Tumors Other Than Fibroma of the Ovary with Acites and Hydrothroax," he listed, from the same literature, all the cases that fell into what he later called pseudo-Meigs' syndrome. The total number of cases in this report was twenty-six benign tumors and fourteen malignant tumors.

DR. MEIGS' REVIEW OF 124 CASES COLLECTED FROM THE LITERATURE TO 1954

I. True Syndrome, 84 cases.		
Fibroma of the Ovary	69	82.3%
Thecal Cell Tumors	8	9.6%
Granulosal Cell Tumors	5	5.7%
Brenner Tumors	1	1.2%
Unclassified	1	1.2%
II. So Called Pseudo-Meigs' Snydrome, 40 cases		
1. Benign Tumors, 24 cases		
Ovarian Cysts	24	42.5%
Leimyoma of the Uterus	5	12.5%
Teratoma	2	5.0%
Fallopion Tube Papilloma	1	2.5%
Undefined Pelvic Mass	1	2.5%
2. Malignant Tumors, 14 cases		
Papillary Cystadenoma	9	22.5%
Kruckenberg Tumors	1	2.5%
Adenocarcinoma	1	2.5%
Carcinoma	1	2.5%
Papillary Cystadenoma with Ca of Uterus	1	2.5%
Fibrocarcoma	1	2.5%

Pleural Effusion In 84 Cases of Meigs' Syndrome		
Right Side	52 cases	62%
Left Side	9 cases	10%
Both Sides	20 cases	24%
Not Reported	3 cases	4%

CASE REPORT

This patient is a white female, 87 years of age. She was first seen on September 26, 1960, at which time her chief complaint was pain in the calf of the right leg of two days duration.

Physical examination at this time revealed an asthenic, senile appearing female, weight 109, blood pressure 154/70, temperature 98.6° F. Her posture indicated a marked kyphosis of the dorsal spine. Heart was regular in force, rate and rhythm, rate was 90; systolic bruit were present over the mitral, pulmonic and aortic areas; there was no evidence of enlargement.

Examination of the lungs revealed physical signs of an extensive right pleural effusion. The abdomen was scaphoid and a mass was apparent on inspection. Palpation revealed a freely moveable mass, approximately three by four inches in diameter, firm in consistency, not tender, the upper border of which was 1 inch below the umbilicus and to the left of the midline. There was no evidence of ascites.

The right leg presented the physical signs of a phlebitis. Pelvic examination was refused. The patient was very disturbed to learn of these extensive findings, requested treatment only for the condition of her leg and refused further investigation of the tumor and pleural effusion. The right leg improved with treatment.

Physical Complaints

She returned on December 16, 1960, complaining of weakness, dyspnea on exertion, pain in right anterior chest, non-productive cough, pain in abdomen, anorexia and loss of weight as well as joint pains and low back pain.

Physical examination at this time revealed weight to be 112 lbs., blood pressure 146/70, findings in the chest essentially the same, the abdominal mass was about the same size and, on pelvic examination, appeared to involve the left adnexa.

The patient now permitted a urinalysis which was essentially negative. The complete blood count indicated HB 79%; 11.4 gm, RBC 3,790,000. WBC 6,920, with differential count of polys. 66%, lymphs 26%, eosinophiles 6%, monocytes 2%. EKG tracing was within normal limits.

X-rays of the chest and abdomen revealed massive right pleural effusion and a shadow of soft tissue mass in the abdomen and pelvis. The patient was advised that she was suffering from Meigs' syndrome in addition to her arthritis and generalized arteriosclerosis. She again refused any consideration of the treatment of her major pathology and demanded only relief of her joint and back pains.

On February 2, 1961, due to increasing abdominal discomfort, edema of the feet and enlargement of the abdomen, the patient again sought medical attention. At this time a very interesting change was noted in the physical

X-ray Chronology

". . . This evidence definitely indicates that the pleural effusion moved from the chest to the abdomen and back to the right pleural cavity during February, 1961, and again during the latter part of April and early part of May, 1961."

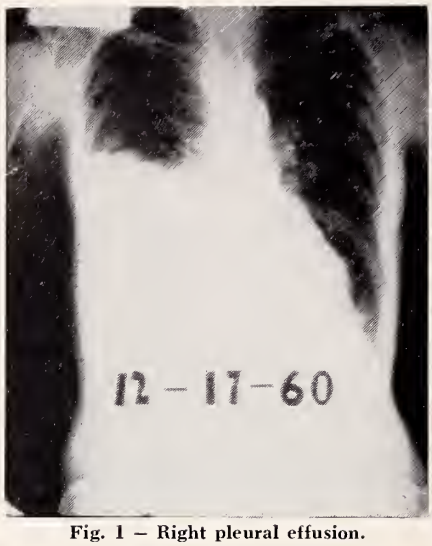


Fig. 1 – Right pleural effusion.

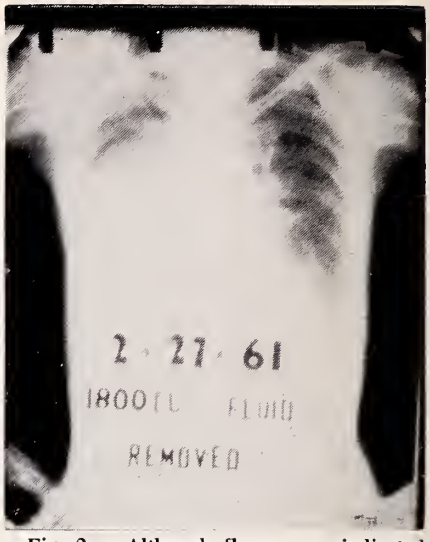


Fig. 2 – Although fluoroscopy indicated no fluid in chest 2-20-61, this indicates amount of fluid present on 2-27-61. Following this, 1800 cc. was removed.

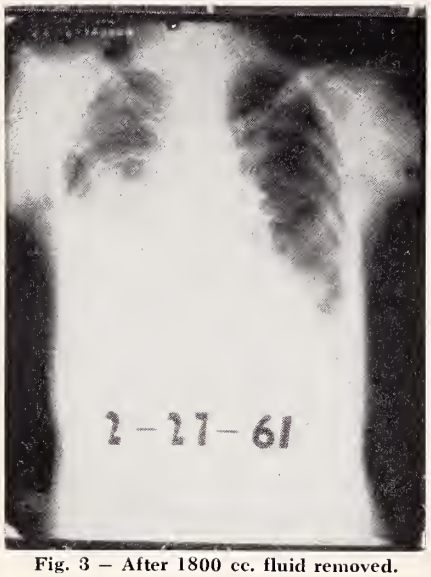


Fig. 3 – After 1800 cc. fluid removed.

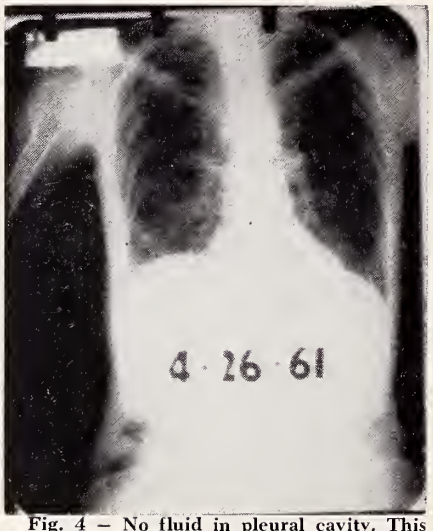


Fig. 4 – No fluid in pleural cavity. This confirmed fluoroscopy finding 2-20-61 that fluid completely moved to abdominal cavity.

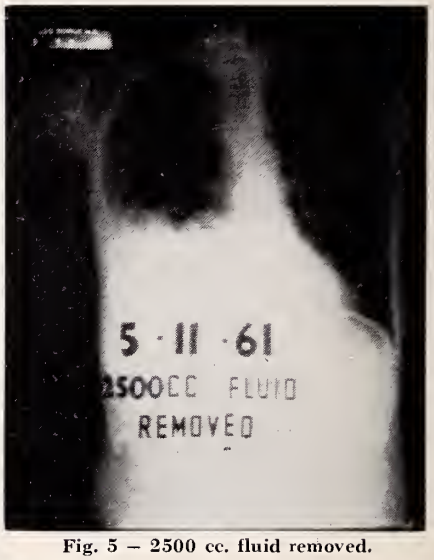


Fig. 5 – 2500 cc. fluid removed.

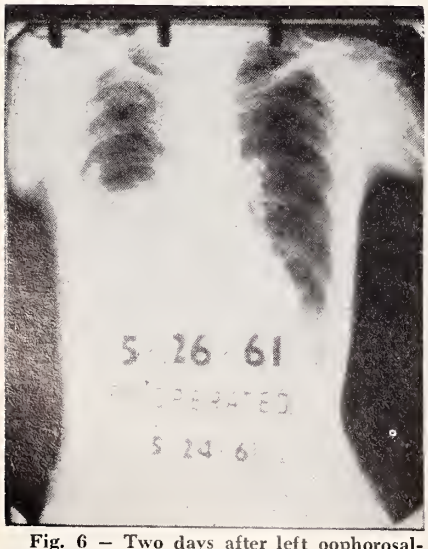


Fig. 6 – Two days after left oophorosalpingectomy performed.

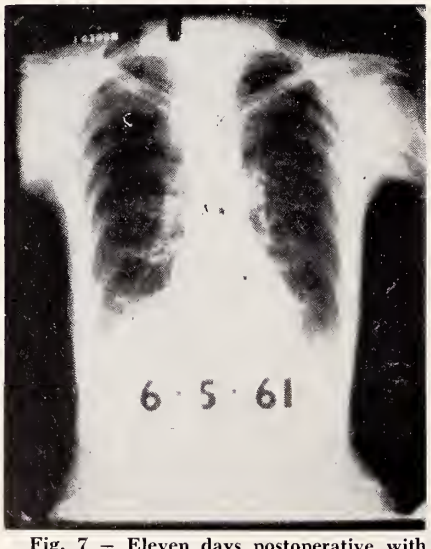


Fig. 7 – Eleven days postoperative with spontaneous absorption of fluid. No fluid was detected in abdomen on physical examination.

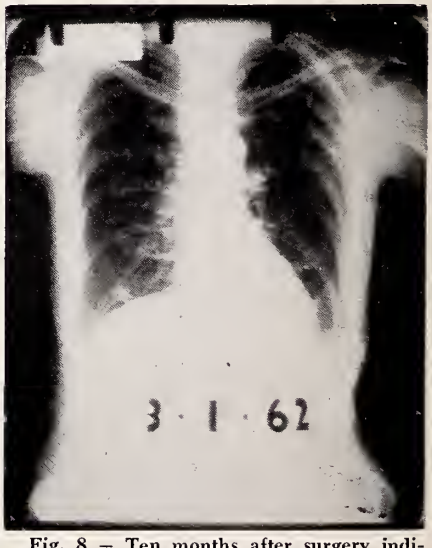


Fig. 8 – Ten months after surgery indicating no return of pleural effusion.

signs of the chest and abdomen.

The pleural effusion was very much decreased and this was confirmed on fluroscopy. The abdomen was very prominent and examination revealed this was due to ascitic fluid. The tumor mass could be definitely palpated in this fluid.

Further observations, up to February 20, 1961, indicated a decreasing pleural effusion and an increase of ascites. On this date, fluroscopy revealed no pleural effusion.

The patient was next seen February 25, 1961, at home with the history that, on the previous day, she experienced a recurrence of severe pain in the right upper chest following which the enlargement of the abdomen decreased and the abdominal pain diminished. She was very dyspneic and requested treatment for dyspnea and chest pain.

Patient Hospitalized

Following a review of the problem with the patient and her family, she accepted hospitalization on February 25, 1961, for the purpose of studies designed to determine whether or not the abdominal tumor was benign or neoplastic and to evaluate the patient's condition for surgery. X-ray of her chest on admission indicated an extensive right pleural effusion.

Thoracentesis was performed on February 27, 1961, removing 1800 cc. straw colored, cloudy fluid. Chest X-ray following this demonstrated fluid still present in the right pleural cavity.

Paracentensis was performed on February 28, 1961, at which time very little ascitic fluid was obtained. Laboratory and pathologic study of these fluids were inconclusive. The pathologist considered the pleural fluid an inflammatory exudate and not likely to be related to Meigs' syndrome and suggested consideration of a Krukenberg tumor.

Due to her unsatisfactory condition, a G.I. series was not performed. The patient was considered an unsatisfactory surgical risk and discharged March 2, 1961, with the understanding she would be given relief for respiratory distress with thoracentesis when indicated.

The patient presented herself for re-examination in the office on April 25, 1961, stating that she had recently experienced a marked increase in the size of her abdomen with increased discomfort; also, that chest pain had subsided as well as the dyspnea and cough.

X-ray of the chest on April 26, 1961, demonstrated an absence of pleural effusion. Physical examination of the abdomen indicated the tumor as previously noted in a very enlarged abdomen with ascitic fluid. The evidence available thus far definitely indicated that the pleural effusion could not be due to metastatic implants on the pleura and reconsideration was given to the question of this patient being able to successfully sustain the surgical removal of the abdominal tumor.

On May 11, 1961, the right pleural effusion recurred and 2500 cc. pleural fluid was removed. The patient finally requested consideration of the surgical treatment and she was readmitted to the hospital on May 23, 1961, with the understanding that a finger exploration would be performed and a biopsy done and that the tumor would be removed if it were benign.

The patient was operated May 24, 1961. Finger exploration revealed a smooth, encapsulated, freely moveable tumor of the left adnexa. Because of this, it was decided to remove it. A general anesthetic was given, the incision extended and the abdomen explored. A moderate amount of serous fluid was noted in the abdomen. The stomach, duodenum, gall bladder, liver, pancreas and spleen were entirely negative.

A left oophorosalpingectomy was performed. The patient's post-operative course was excellent. Daily physical examination revealed a rapid disappearance of the pleural effusion.

On June 5, X-ray examination demonstrated no pleural fluid. The patient was discharged June 7, 1961. The pathological report indicated the tumor to be a pseudomucinous adenocarcinoma of the ovary. Follow-up of this patient through September 11, 1961, indicates an excellent recovery with no recurrence of symptoms or pleural effusion.

DISCUSSION

The present day definition of Meigs' syndrome, according to Meigs(3) is:

First: The tumor must be a benign and solid tumor with the gross appearance of a fibroma. Because of the likeness to fibroma of thecomas, granulosal-cell tumors and Brenner tumors, they are included in the syndrome.

Second: The tumor must be accompanied by ascites.

Third: There must be fluid in the chest. This may occur on one or both sides but is usually

found on the right side. The fluid, generally, is said to be that of a transudate; however, there have been reported cases of the fluid being bloody(17, 18) and of the specific gravity being as high as 1.040.(19) The fluid may show few to many WBC which are usually lymphocytes when present. One case(20) demonstrated an inflammatory process in the pleura on thoracoscopic examination. The Papanicolaou examination has always been negative. Cultures should be negative unless infection has been introduced iatrogenically. Occasionally, the fluid has been noted to clot on standing.

Fourth: The removal of the tumor must relieve the patient of the ascites and chest fluid.

The definition of pseudo-Meigs' syndrome varies from the above criteria with regard to the first requirement. The last three conditions are the same.

Differences Cited

The first is different in that the tumor may be any tumor in the pelvis exclusive of those mentioned above. In Meigs' review(16) in 1954, there were twenty-six benign tumors including ovarian cysts, leiomyomata of the uterus,(21, 22, 23) teratomas,(21, 24) and papillomas. There were fourteen malignant tumors including papillary cysts of the ovary,(9, 10, 24, 25) Krukenberg tumor, adenocarcinoma of the round ligament, carcinoma, fibrosarcoma and pseudomucinous cystadenocarcinoma.(10, 11, 26, 27)

As for the second and third requirements for the syndrome, it must be emphasized in the malignant cases that both effusions must be benign, due in some manner to the presence of the mass and not to metastasic implants. If the fluid is due directly to a malignant process, then the fourth requirement cannot be met and the case cannot be called a pseudo-Meigs' syndrome.

A careful study of the available literature, including all of Dr. Joe Meigs' reports, leads us to the conclusion that the definition of this clinical entity justifies revision. Some writers have suggested this in the past.(9, 10) Dr. Meigs has considered this but continues his earliest clinical position.

It should be emphasized that, up to 1937 when Meigs presented his first report on "Fibroma of the Ovary with Ascites and Hydrothorax," no papers had been written on this clinical trial for some years. His first report included seven cases.

In 1943, Meigs reported on a series of twenty-seven patients. His subsequent two excellent reports in 1954 indicated a total of one hundred twenty-four cases; eighty-four were typical of the Meigs' syndrome and the remaining forty were other types of tumors.

The 1943 paper states that the cystadenomas, fibroids or cancers with fluid in the chest and abdomen were not reported due to the small number. He further writes that, should these increase in number and become a large enough group, they should be included in the syndrome.

It has been of considerable interest to continue with our study of Dr. Meigs' thinking regarding this important subject of definition and classification.

Following his extensive analysis of the literature in 1953, speaking before the American Academy of Obstetrics & Gynecology at Cincinnati, Ohio, December, 1953, he stated, following a discussion of cases other than fibromas:(16)

"The results after removal of the benign cysts, teratomas, and leiomyomas are excellent, and the fluids disappeared in each instance. In the malignant group, however, some were cured and the fluids vanished, but 3 patients died without operation, 2 died because of the tumors. The fluid in the chest had disappeared in both cases. If the cyst or tumor is benign, a good result can be expected, and there will be no more accumulation of chest or abdominal fluid. In the cancer group, however, this will depend upon the extent of the malignant process, but strangely enough the pleural effusion rarely recurs.

Histories Differ

"It is evident from a perusal of these 10 histories that a good case can be made for including them in the group of the true syndrome, but they are different, and considering the proportion of cancers of the ovary to fibromas of the ovary, the number of such cases is small. There must be something different and distinctive in the cases of fibroma of the ovary. Why should they be so frequent among those showing fluid in the abdomen and chest? It may seem arbitrary to try to define Meigs' syndrome, omitting the other lesions that may be responsible for a similar picture, but it would seem that the fibromas are way out of proportion as etiologic factors. There is no question but that

a malignant process may be responsible.

"I realize that the argument is not very strong, but, from a careful study of all the cases reviewed, it is best to divide the syndrome, for certainly the epithelial tumors may be different.

"The real puzzle is the reason for fluid in the abdomen."

Clinical Triad

It is our opinion that Dr. Meigs' basis for his classification, namely: the relative frequency of the type of tumor in this clinical triad of abdominal tumor, ascites and hydrothorax, warrants reconsideration. Since it is generally agreed that there is nothing distinctive about the laboratory findings in this clinical triad, it is most important to recognize that, without surgery, no definitive evaluation of the nature of the tumor can be established.

Without any more knowledge than we presently have, except for the statistics relating to the nature of the various tumors involved, it would appear that the most important consideration to the physicians seeing patients with this syndrome, namely: an abdominal tumor, ascites and pleural effusion, should be that we are dealing with a condition that is amenable to surgical treatment with excellent results.

We believe this should be the determining factor in a consideration of definition and that a classification of pseudo-Meigs' and true Meigs' syndrome is academic rather than based on the clinical importance to the physician's judgment regarding treatment which is, in the final analysis, the basis of our service to the patient with this clinical syndrome. Including all abdominal tumors associated with ascites and hydrothorax would appear to be a logical clinical definition.

This case is of unusual interest due to the availability of clinical and X-ray evidence with regard to the movement of the fluids in the abdominal and pleural cavities. This evidence definitely indicates that the pleural effusion moved from the chest to the abdomen and back to the right pleural cavity during February, 1961, and again during the later part of April and early part of May, 1961.

It has been generally accepted that the ascitic fluid always moved from the abdominal cavity to the pleural space. There are no clinical observations reported similar to those presented in this case report. Our conclusion that the fluid does move from the chest cavity to the abdomen is supported by the report of Cowan et al,(29) who recently definitely demonstrated that colloidal gold in the chest will appear in the abdomen. This finding is limited to one case. Cowan offers the opinion that some form of rapid transdiaphragmatic lymphatic transport is the most feasible explanation from the results of their study. Our clinical observations support this theory.

Although the patients available with this syndrome are very limited, it would be of much interest for physicians who have the opportunity to observe those patients who do not accept surgery, for clinical evidence of movement of the pleural fluid to the abdomen and the reversal of this flow back to the chest.

There has been much written in an attempt to discover the cause of the ascites and the method of transport of the fluid into the chest. Meigs, Armstrong and Hamilton(28) have shown that the passage of the fluid is from the abdomen to the chest and not the reverse. Our patient, however, did not follow this rule. As can be seen from the history and X-rays, the fluid would sometimes be predominately in the chest and sometimes in the abdomen and the relationship would change over a matter of a few days. As far as we know, this type of situation has not been reported in any of the patients with the true or false syndrome. We have no explanation for this and can only offer a suggestion.

Dr. Meigs has discussed the possibility that the fluid could pass through a congenitally patent foramen of Bochdalek or other congenital diaphragmatic opening. These foramen, if large enough, would allow the fluid to move back and forth.

Dr. Gross' Statement

Dr. Meigs goes on to say that his friend, Dr. Samuel Gross, states that congenital diaphragmatic openings are rare occurrences and that patients with sizable ones die unless operated upon and cured when very young. Since these syndromes are also rare, the chance of the two occuring together is remote. Our patient, then, may be the first reported case. Another possibility to consider is the fact that she may have an old diaphragmatic tear due to truma.

It is interesting to note that Cowan et al(29) have shown that transport of fluid can move

from the chest to the abdomen. They proved this by demonstrating that colloidal gold placed in the chest appeared in the abdominal fluid. Careful clinical study of our patient would seem to bear out this fact.

Ross and Farber(30) reported three cases where air was placed into the abdomen and, following a period of stress, the air suddenly escaped into the chest cavity. Their review of the literature revealed reports of five similar cases. Twelve more cases were discovered by mailing questionnaires to a number of chest physicians.

Every case they studied had the pneumothorax on the right. They postulated the presence of a diaphragmatic defect, probably congenital. They explained the right sided occurance of all the pneumothoraxes on the basis of increased pressure between the liver and the diaphragm as the air is compressed between these structures.

The rapid escape of the air in all reported cases would imply a large opening between the two cavities. The rapid change in location of the fluid in our patient would imply also the presence of such an opening.

Dr. Meigs believes the best explanation for the abdominal fluid is as follows: "In cases of fibroma of the ovary, the tumors, by their very nature, excrete fluid through their own lymphatics since these tumors always appear edematous and will leak fluid if removed and put in a container."(16) The presence of abdominal fluid in pseudo-Meigs' syndrome, he says, is another matter.

Fluid Transport

These tumors do not show edema as do the fibromas so that the fluid may come from the cells making up the lesion.(16) He believes that the entrance of fluid into the chest may be the same in all cases. This is generally attributed to the negative pressure in the chest pulling the fluid up through the diaphragmatic lymphatics which are richer on the right.(16) Work done by Cowan et al,(29) Ross and Farber's(30) report and our patient would suggest that there may, on occasions, be some other mechanism of fluid transport.

The signs and symptoms of both these syndromes are the same and usually typical. Abdominal swelling and pain, dyspnea (nearly always present), chest pain, loss of weight, edema of the legs, signs of fluid in the chest and a pelvic mass on physical examination, should at once suggest the possibility of this syndrome. X-ray will confirm the presence of chest fluid. Laboratory studies are usually of little help except for those on the cavity fluids which have been discussed before.

Treatment of these two syndromes is the same. It is simple and the results uniformly gratifying. Simple surgical removal of the tumor will almost always effect a cure; therein lies the great importance of recognizing this entity. It should be emphasized, as witnessed by the patient discussed in this report, that operation should be attempted even if the patient is only a fair surgical risk as this simple operation may add many years to the patient's life with greatly increased comfort.

SUMMARY

This is a report of a patient in advanced years with the clinical triad of abdominal tumor, ascites and hydrothorax. The diagnosis was pseudomucinous adenocarcinoma. The patient was operated and has made a good recovery. The clinical symptoms and pre-operative findings were characteristic of Meigs' syndrome. The pathologic report would, according to Meigs' classification, require a change of diagnosis to pseudo-Meigs' syndrome.(16) We do not believe this is justified and consider that the clinical course of this patient warrants a final diagnosis of Meigs' syndrome.

Treatment of the patient should be based on the findings of a triad of abdominal tumor, ascites and hydrothorax and is surgical removal of the tumor. Repeated aspiration of fluid is not justified except for temporary relief of dyspnea and chest pain while the patient's condition is improved to reduce the surgical risk of removing the tumor.

This patient's clinical course definitely indicates that the pleural fluid may migrate from the chest to the abdomen and vice-versa.

Importance Emphasized

It is stressed that laboratory examination of the abdominal fluid and pleural effusion should be done for clinical study but that the findings should not be regarded as a basis for deciding whether or not to operate for the removal of the tumor. The importance of the recognition

and treatment of this clinical entity is emphasized.

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(The adjacent discussion of this paper was presented at the annual meeting, The Arizona Medical Association, April 27, 1962 — Ed.)

DISCUSSION OF MEIGS' SYNDROME

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I will not comment on Doctor Schnur's comprehensive review of the literature concerning Meig's syndrome, but would like to speculate on the ascites and pleural effusion as a phenomenon of ovarian tumors in general, and fibrous tumors of the ovary in particular.

Certainly the most common condition in which ascites is found is hepatic cirrhosis. The weight of evidence now suggests that cirrhotic ascites is produced by the increased fibrosis of the liver substance, which, in turn, causes progressive obstruction of the hepatic veins.

This leads to increased capillary filtration and lymph formation in the liver. The lymph formation exceeds the capacity of the hepatic channels, so that the entire liver weeps fluid into the peritoneal cavity. The rate of transudation of the liver lymph exceeds the capacity of the peritoneum to absorb the fluid by an amount that causes a net gain of fluid in the peritoneal cavity of a few liters each month. Pleural fluid appears in eight per cent of cirrhotic ascites.

Fluid Evacuation

Experimental studies, using radio-active tracer elements, have shown that the chief route of evacuation of protein or colloid containing fluids from the peritoneal cavity is through the diaphragm, aided by the movements of respiration. This occurs chiefly through the retrosternal lymphatics. Pleural effusion appears when this mechanism is overloaded. Since the lymphatics of the right diaphragm normally carry a larger share of the load, right pleural effusion is more common than left. This fluid is not static but moves freely from one cavity to another via this route.

The blood supply and lymphatic drainage of the ovary is unique and has striking peculiarities that may be significant in the pathogenesis of ascites. The vascular pedicle of the ovary contained in the infundibulopelvic ligament is not only narrow, but the end arteries, which are the small intrinsic spinal arteries, are associated with an increased capillary pressure and appear to be significant in the special mechanism associated with ovulation.

The tendency of the ovary to form cysts under any and all circumstances might conceivably be related to the fact of an anatomical deficiency in the lymphatic drainage of the ovary. In ad-

dition, the ovary has no real capsule, like the testis. One is impressed in comparing the two analogous structures that the testicular tumors, whether intra-abdominal or not, usually metastasize via lymphatic channels, whereas ovarian tumors find it easier to exfoliate directly into the peritoneal cavity and implant or spread by the hematogenous route.

It is interesting to postulate that the ovarian pedicle, its arteries, veins and lymphatics, has a certain load limit. This would correlate with the recent observations of Upfelder who, in a recent classification of ovarian tumors, reviewed some 42 ovarian fibromas. Twenty-three of these fibromas were under five centimeters in diameter and were not associated with ascitic fluid. Nineteen, however, were over five centimeters and of these eight had a significant amount of peritoneal fluid. Of these eight, only three had hydrothorax.

This would help to substantiate the theory of a functional load on the ovarian pedicle. It would also explain the infrequency of ascites with uterine leiomyomata, which have at their disposal the broad uterine pedicles with large lymphatic channels which are easily seen in cases of large uterine tumors.

This explanation gains force when one sees a pseudo-Meig's syndrome secondary to pedunculated subserous uterine fibroid that has a narrow pedicle or is completely dependent on a parasitic blood supply. The functional load placed on the pedicle is proportional to the mass of living cells depending upon it, so that a cyst, however large, would be a relatively small load functionally, represented only by the mass of cells in the cyst wall.

Solid Tumors

Therefore, other things being equal, the tumor with the high metabolic rate, a solid tumor in other words, would require a large blood supply and therefore place a greater demand on its vascular lymphatic pedicle and would, by the above hypothesis, be expected to be associated with a higher instance of ascites.

In the cases of ovarian fibroma, it is well known that those associated with ascites are edematous and that the tumor lacks any capsule, unlike most other solid ovarian tumors, including secondary carcinoma. The size of the tumor, therefore, correlates with the instance of ascites mentioned in the above series.

It shows that the fibromas do have a special ability to form ascitic fluid in comparison with other tumors, malignant ones excepted. The amount of fluid formed by the fibroma can be correlated with the amount of edema in the tumor itself, which would explain the increase in transudation.

There is no correlation, however, between the amount of intraperitoneal ascitic fluid and the instance of pleural effusion. This appears to be purely an individual situation, depending on the capacity of the diaphragmatic lymphatics. Why the pleural fluid suddenly disappeared in Doctor Schnur's case is difficult to postulate, except that following the abdominal paracentesis this could have relieved pressure in the diaphragmatic lymphatics with secondary absorption of the pleural fluid. This, of course, would recur as the abdominal fluid re-accumulated as mentioned above.

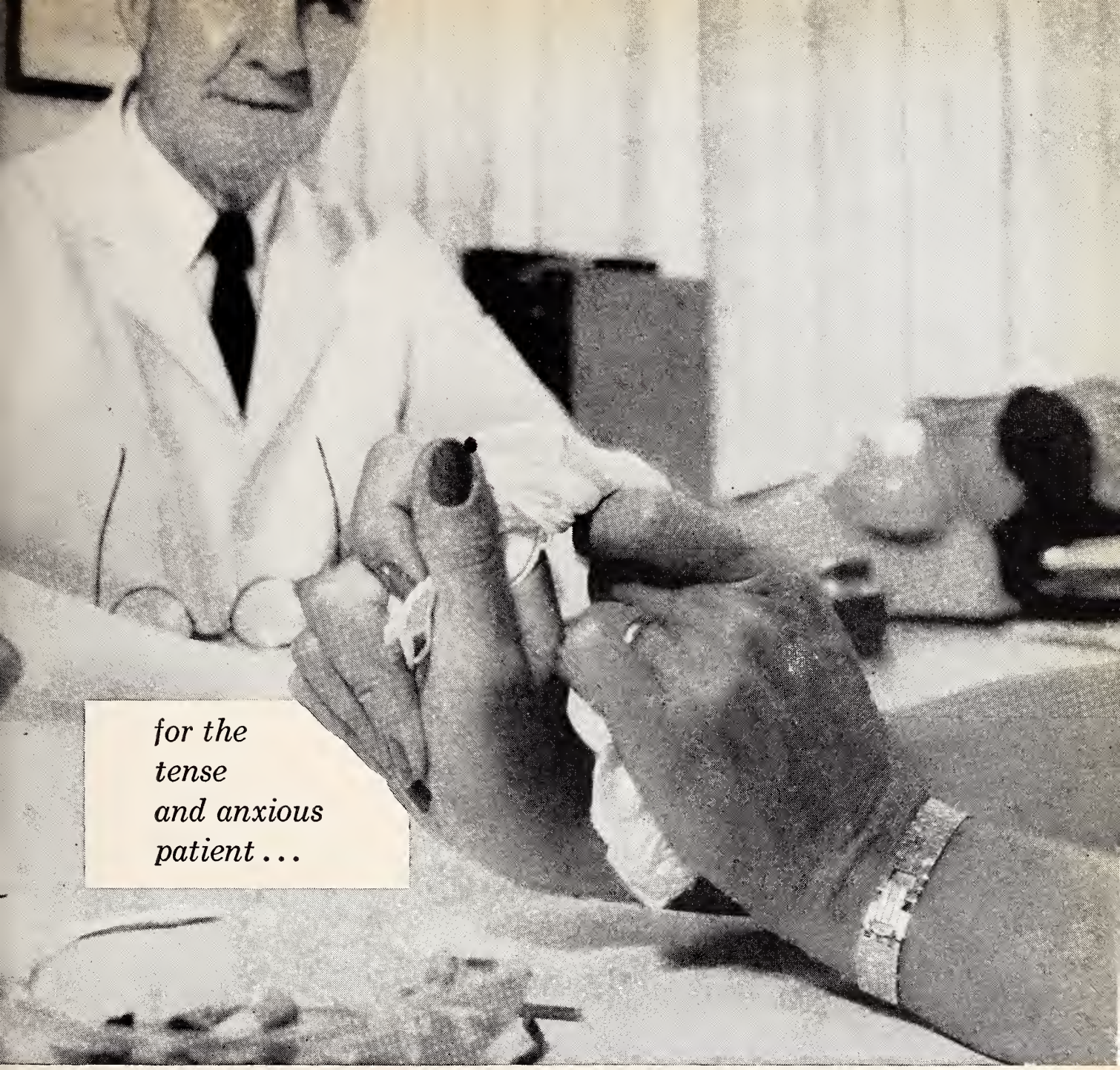
Important Points

I think there are several important points brought out by this presentation. The first one is that one should not be deterred from surgical exploration, either by ascites or pleural effusion, other things being equal.

Second, the entire peritoneal cavity should always be explored in cases of ovarian tumor, not only for the possibility of metastasis, but also for detecting a primary tumor of the stomach or colon. These primary tumors are small and can only be found if one makes a definite effort to palpate these organs.

Third, I think it is imperative that all ovarian masses should be submitted for frozen section. Although after gross inspection of these tumors one can be relatively sure of the differentiation between a malignant and a benign lesion, in the individual case this doesn't hold.

Certainly it is to the patient's benefit to make a positive identification of the tumor before closing the abdomen. In a younger patient, especially in the case of a benign tumor, I think it is important that the opposite ovary should be bisected to determine whether or not there is a seedling of a similar tumor in the remaining ovary, since a goodly proportion of these benign tumors are bilateral.



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CME-0030



from boutonneuse fever in Afric

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o bronchopneumonia in Arizona

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THE MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

Annual Meeting

December 5-7, 1962

The Medical Society of the United States and Mexico is preparing for its next meeting which will be held in Tucson, Arizona on December 5, 6 and 7 with headquarters at the Tidelands Hotel.

Based on the success of the new format of the program as it developed at the last meeting in Hermosillo, the forthcoming scientific program will feature round-table discussions, panels and a clinical pathological conference in addition to the various other individual papers which may be given.

Obstetrics, gynecology, pediatrics and pulmonary physiology will be covered in a special way for the first time in the history of this group in the next meeting.

The social timetable has already been formulated to a great extent. After the inaugural session on Wednesday morning, December 5, the ladies will attend a luncheon at The Carousel in Tucson. On that evening, there will be a joint break-the-ice party consisting of cocktails and buffet supper at the Saddle and Sirloin Restaurant in Tucson.

The following day, a luncheon at the Old Pueblo Club will be attended by the members as well as the ladies. The traditional dinner-dance will be held on Friday night at the Tidelands Hotel.

A preliminary announcement and a questionnaire will be mailed which will contain a more detailed scientific program. The recipients are urged to answer at the earliest opportunity in order that a good estimate may be made of the expected attendance so that in turn preparations can be made more efficiently.

The Medical Society of the United States and Mexico is proud of the fact that three physicians from Guadalajara will begin appointments as externs at one of our Tucson hospitals as part of a pilot project sponsored and conceived by our society.

The arrangement of this project provides for the hiring as externs of Mexican physicians who have not as yet passed their E.C.F.M.G. examination. The hospitals contract with these individuals to provide an adequate program of training in English and medicine to enable them to pass the examination. If the test is completed successfully, then these individuals will then serve the hospitals as interns or residents for a period of one year, in return.

The three candidates who are about to occupy these positions have been chosen through the society and its officers in Mexico from the ranks of the recent graduates of the University of Guadalajara Medical School.

We look forward to the reality that this plan will be eminently successful and can be expanded greatly, still through the auspices of our Medical Society of Mexico and the United States.

Juan E. Fonseca, M.D.
President

SOCIEDAD MEDICA DE LOS ESTADOS UNIDOS Y MEXICO

Próxima Reunión

Diciembre 5-7, 1962

La Sociedad Médica de los Estados Unidos y México está preparándose para su siguiente reunión, la cual se llevará a cabo en Tucson, Arizona los días 5, 6 y 7 del próximo Diciembre en el Hotel Tidelands.

Teniendo en cuenta el éxito de la nueva forma de programa que se desarrolló en Hermosillo durante la última reunión, el próximo programa científico incluirá discusiones de tipo mesa redonda, grupos que servirán como jurados, y una conferencia clinicopatológica, además de otros varios trabajos individuales que puedan ser presentados.

Por primera vez en la historia de este grupo se hará un esfuerzo especial en lo que concierne a la obstetricia, a la ginecología, a la pediatría y a la fisiología pulmonar.

Se ha formulado ya gran parte del programa social. Después de la sesión inaugural en la mañana del miércoles 5 de diciembre, las damas asistirán a un almuerzo en "The Carousel" de Tucson. Esa misma tarde habrá tertulia en la cual todos podrán familiarizarse. Se servirán cocteles y luego una cena estilo bufete en el "Saddle and Sirloin Restaurant" de Tucson.

Al siguiente día serán agasajados tanto los miembros como las damas en un almuerzo en el "Old Pueblo Club." La tradicional cena y baile tendrá verificativo el viernes por la noche en el Hotel Tidelands.

Por correo se enviará un anuncio preliminar junto con un cuestionario que traerá más detalles científicos. Nos permitimos instar a las personas que los reciban a que contesten cuanto antes para poder calcular el número de asistentes y así permitir que los preparativos se hagan con la debida anticipación.

La Sociedad Médica de los Estados Unidos y México se siente orgullosa del hecho de que tres médicos de Guadalajara comenzarán sus asignaturas como externos en uno de los hospitales de Tucson, siendo éste el motivo de un proyecto patrocinado y concebido por nuestra sociedad.

El feliz arreglo de este programa hace posible que se ocupe como externos a médicos mexicanos que hasta la fecha no hayan presentado el examen para post-graduados extranjeros (E.C.F.M.G.). Los hospitales se comprometen a formular un programa adecuado de entrenamiento en inglés y en medicina para que se salga bien de dicho examen. Los que salgan aprobados deben a su vez actuar en los hospiltales como internos o residentes por el período de un año.

Los tres candidatos que actualmente se disponen a ocupar estos puestos han sido escogidos de entre los graduados recientes de la Escuela de Medicina de la Universidad de Guadalajara por medio de la Sociedad y sus oficiales en México.

Nosotros esperamos de hecho que este plan sea en todos los conceptos satisfactorio y que pueda ser grandemente ampliado por medio de los auspicios de nuestra Sociedad Médica de México y Los Estados Unidos.

Juan E. Fonseca, M.D.
Presidente

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1. Ford, R. A., and Blanchard, K. Journal-Lancet 78:185, 1958

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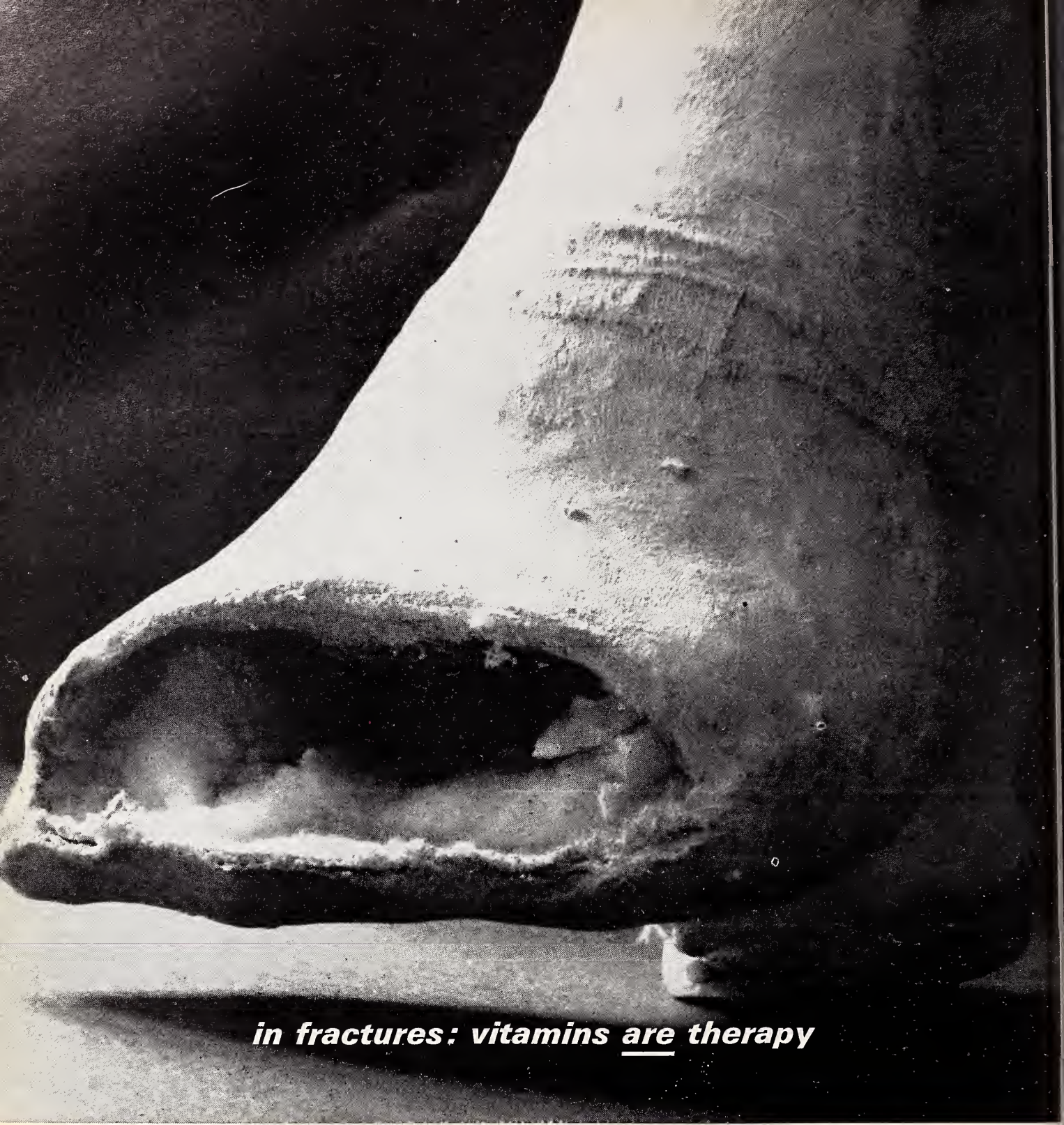
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OUR PUBLIC IMAGE

The public relations firm of John E. Turner & Associates worked with The Arizona Medical Association for four months (March-June, 1962) in our program of opposition to the passage of the King-Anderson Bill. A member of this firm, William Van Camp, worked full time in our behalf.

The final report from Washington is now in and we believe that our coordinated efforts were very effective.

During these four months, the members of this public relations group were in intimate association with the doctors of our association and our problems. They took our problems directly to the public where they studied the people's reactions and learned of our public image. Their conclusions and recommendations as follows are worthy of your study.

LESLIE B. SMITH, M.D.

The Problem: A Continuing One

The outcome of this program (opposition to King Anderson Bill) has been effected by a whole coalition of problems. These include the problems of doctors' fees, hospital charges and procedures, the changing pattern of medical practice, myths about doctors' and hospitals' lack of interest in indigent patients, etc.

In short, we are dealing from a constantly deteriorating public image of American medicine.

It may be argued that these problems do not exist; that such allegations are unjust accusations. Whether or not these public attitudes are based on true facts is irrelevant. The fact is that a large and vocal part of the public believes they are true. That is the problem.

It can be argued that even if these problems did not exist in the degree that some people indicate, that they are irrelevant to the issue at hand. Once again it is true. But it is also true that the people make political decisions and form attitudes upon irrational basis. These attitudes directly affect our legislative activity. They must be dealt with and in the near future unless medicine is willing to suffer a real setback the next time this bill or one like it is introduced in congress.

The most educated observers tell us that this bill, or a more extensive one, will be introduced

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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Exclusive Publication — Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
7. Reprints will be supplied to the author at printing cost.

Editorials of Arizona Medicine are the opinions of the authors and do not necessarily represent the official stand of The Arizona Medical Association. The opinions of the Board of Directors may be sought in the published proceedings of that body.

into the next congress. The time to begin to prepare for that battle is now!

Recommendations

1. The introduction of a generous and workable version of the Kerr-Mills bill into the state legislature. It has been to our disadvantage in Arizona not to have appeared interested in the passage of this alternative to the King-Anderson Bill.

2. The design and continuation of an effective public relations program to deal with negative public attitudes concerning the medical profession and medical practices to include:

 a. The continuation of the Medical Speakers' Bureau.
 (1) The association needs to spend time and effort improving the communications skills of most of its speakers.
 (2) New materials to meet the needs of speakers should be available.
 b. The preparation of new printed literature or pamphlets to cover areas of public concern to be directed to local and statewide areas.
 c. If at all possible the production of radio and/or television series should be undertaken to deal with these problems.

The objectives of such a program would be to inform and educate the general public about matters of concern both to the medical profession and to consumers of medical services, i.e., to establish a newer and more realistic image of local medical doctors and to help establish an identity and reputation for Arizona medicine apart from that of the American Medical Association.

Finally, the purpose of such a program would be to build such support for Arizona medicine that in the future, national legislation, harmful to the medical profession, can be fought from a positive local base of public understanding.

John S. Turner & Associates

GESTURES

Gestures come before language and go far beyond it.

The infant (in-unable; fari-to speak) mimics the adults and has no other way to get in touch with them. He beckons or points. His tiny movements control and manipulate the fates and figures around him; and he experiences primary omnipotence. Many times under stress he will later revert to the use of primitive and magical gestures.

On the farther side of communication, beyond the wave lengths of language, are moods and aspirations which can be expressed only in music and art, drama and the dance.

There is no dictionary or catalogue of gestures and facial expressions, of intonations and inflections, of evocative or indicative movements. One can learn about them by studying the great dancer or actor and by really looking at paintings and statues.

Gestures are in the service of communication at both conscious and unconscious levels. In the latter they often belie what the person is thinking to himself or saying to others. And they betray opposite and conflicting emotions. In the interpretation or involuntary gestures the key is recognition of the conflict of interests.

An easy illustration has become the nightclub cliche: the limp-wristed gesticulation by which the homosexual simultaneously conveys an invitation and his ineffectual resistance. It is as if he were saying rather pitifully, "I wish I could wish that I could help being this way but I can't." Or observe the walk of the homosexual, the upper half of the body rigidly disavowing the swinging hips.

Another flagrant example is the rotary twitch of the fanny with an accompanying shrug of the shoulders. This is a vulgar display of coquetry, of course. It is borrowed from our primate cousins — and here we detect the conflict. The young ape of either gender will "present" itself with shame-faced sexuality when it is afraid of the approaching stranger.

Flaunted sexuality of any kind is partially rooted in fear. The so-called exotic dancer or stripper bravely exposes her nakedness and her auto-erotic movements — but safely and impersonally behind the footlights. Why the bravado if there were nothing to fear? Is she undoing an earlier and private shame? And are we, too, in watching her?

Fear obviously underlies the overtalkative and effusive cordiality of both host and guest when welcome is uncertain. The low cut gown of the hostess issues a subtle invitation to partake of the hospitality of the household. The bringing of presents and the giving of door prizes are sometimes unacknowledged bribes.

Comparable is the ingratiating and noninfectious smile with which an individual approaches

an intimidating situation. The smile denies his fear and resentment. And it tries with weak magic to induce the antagonists to smile in return.

Voluntary gestures may lie. But they negate themselves by exaggeration. The supercilious posturings of the beatnik protest too emphatically that he will not compete and does not care. The anthropoid, loose swinging arms of the pseudo-brute tell us that he doubts control of what he might do.

The palms up, open handedness of barter and bargaining fools no one. The pentitent, mea culpa, beats his breast not very injuriously to avert our beating him. The shamed will put up his hand to hide his face. He will escape our critical scrutiny by closing his eyes: we cannot see him if he cannot see us.

How primitive we are! The man in a burlesque theater or a house of ill repute does not look closely at others in the reverse magical hope that they will not be able to recognize him!

Involuntary gestures are more instinctive than language and less likely to deceive. The spontaneity and firmness of a handclasp tell more about the individual or the relationship than the exchange of words. Unfulfilled longing for nearness impels a patient to hitch the chair up closer and to handle the objects on our desk. A sensual licking of the lips will signify amatory interest.

The auto-erotic and obese woman will indulge a rhythmic, scissoring friction of the thighs when sex is mentioned. The sorely inhibited woman will fumble with the buttons of her blouse when we discuss generosity and womanliness.

An impatient urge to leave initiates the tapping of a foot, the symbolic fragment of walking away. Observe the neopolitan cupping of the fingers when one will throw a kiss or toss a bouquet. But note that it is a left-handed compliment.

The body language of hysteria is exceedingly rich in communication of wishes which have been unconsciously renounced. Paralysis is more informative and demanding than the smiling effort to overcome it. And numbness tells the truth of ambivalence and the forbidden wish to touch or feel.

The individual who must not be reminded of his instincts will keep his hands away from his body in fluttering awkwardness. The injured person pats himself to be reassured that he is still intact. The narcissist pats her hair and clothing with a more superficial hypochondriasis of appearance.

The burdened individual hunches his shoulders. The guilty hang their heads, awaiting the sword. The emotionally starved will purse his mouth, as if ready to nurse. There is more saliva in happy anticipation than in sad.

The surfeited will draw back his lips and clench his teeth and swing his head back and forth in rejection. The angry will bite their nails. The self critical will pick at their fingers. The person who cannot find himself will dig for himself through his skin. The one who is going to pieces will hold his head or chest in a desperately firm embrace.

In displacing mental anguish to a more manageable physical pain, one will pinch himself or bite the back of the hand. Wry neck is aptly named: the individual wishes he could turn back. Hiccoughing is hardly to be distinguished from the tired and terminal sobbing of the child.

The prim tighten the sphincters of the lips to keep from taking in the meaning of the joke. The not so prim just cover their mouths with their hands. One sniffs with suspicion or disgust. The cocked ear of intent listening is more genuine than the tilted head of piety. The executive approximates the tips of his fingers when he wants a number of things to jibe.

The peripatetic clasps his hands behind him when he is seeking pure concentration. The man who wishes he had the courage to fight will imitate the boxer's gesture, wiping his nose with his thumb. The orator spreads his arms and legs a bit to cast a bigger shadow.

The general hurriedness of a person informs us that his sublimations are breaking down. It is as if he has no time for the trivial substitutes at hand; maybe around the next corner will come real fulfillment.

Gestures infinitely widen the spectrum of communication. They are the finest tool of the actor. They are the imponderables in weighing contradictory testimony or in judging the credibility of a witness. They require close study by those who are interested in so-called extra-sensory perception. They are the last, desperate signals of the mentally or physically ill who are drifting away from the community of language.

William B. McGrath, M.D.



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*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

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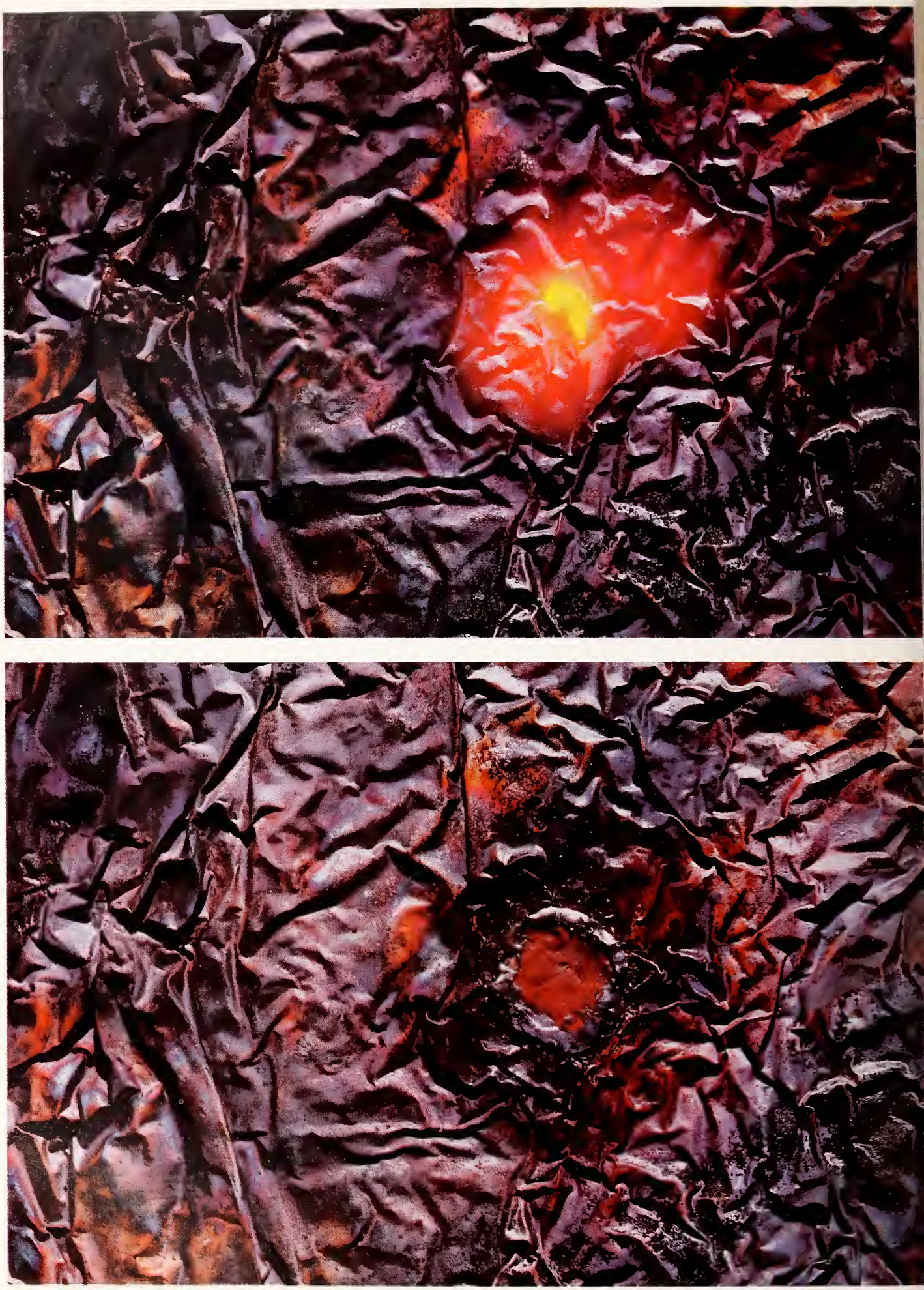
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References: 1. Clinical report on file, Medical Department, A. H. Robins Co., Inc. 2. Schiller, I. W., & Lowell, F. C.: New England J. Med. *261*:478, 1959.

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ulcer under repair

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DIAGNOSIS	ROBINUL					ROBINUL-PH				
	*No. Patients	Excellent	Good	Fair	Poor	*No. Patients	Excellent	Good	Fair	Poor
Marginal Ulcer	11	3	3	3	2	1	0	1	0	0
Pyloric Channel Ulcer	6	3	1	0	2	2	1	1	0	0
Pyloric Ulcer	4	2	1	1	0	1	1	0	0	0
Gastric Ulcer, bleeding	3	1	2	0	0					
Gastric Ulcer	48	31	11	1	5	12	5	7	0	0
Gastric Ulcer, penetrated	1	0	1	0	0	1	1	0	0	0
Gastric Ulcers, multiple	1	1	0	0	0					
Duodenal Ulcer	494	220	195	48	31	99	41	38	13	7
Duodenal Ulcer, bleeding	38	19	15	3	1	2	1	0	1	0
Duodenal Ulcer, obstruction	13	4	3	1	5					
Duodenal Ulcer, perforated	5	2	1	0	2	6	0	3	1	2
Gastric and Duodenal Ulcer	4	2	2	0	0					
Peptic Ulcer, unspecified	25	19	4	0	2	18	8	7	2	1
TOTALS	653	307	239	57	50	142	58	57	17	10
		83.6%					81.0%			

*Clinical reports on file, A. H. Robins Company, Inc.

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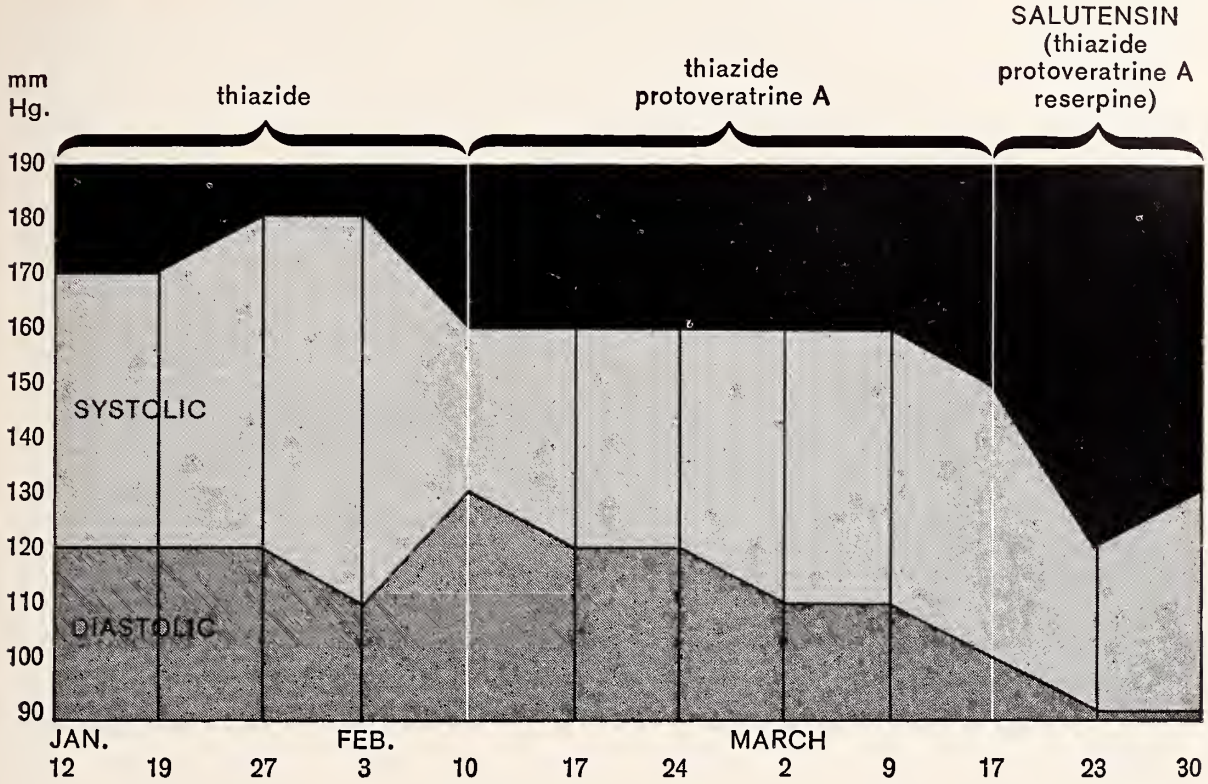
Supplied: Bottles of 60 scored tablets.

References: 1. Fries, E. D.: In Hypertension, ed. by J. H. Moyer, Saunders, Phila., 1959 p. 123. 2. Fries, E. D.: South M. J. **51**:1281 (Oct.) 1958. 3. Finnerty, F. A. and Buchholz, J. H.: GP **17**:95 (Feb.) 1958. 4. Gill, R. J., et al.: Am. Pract. & Digest Treat. **11**:1007 (Dec.) 1960. 5. Brest, A. N. and Moyer, J. H.: J. South Carolina M. A. **56**:171 (May) 1960. 6. Wilkins R. W.: Postgrad. Med. **26**:59 (July) 1959. 7. Gifford, R. W., Jr.: Read at the Hahnemann Symp. on Hypertension, Phila. Dec. 8 to 13, 1958. 8. Fries, E. D., et al.: J. A. M. A. **166**:137 (Jan. 11) 1958. 9. Ford, R. V. and Nickell, J.: Ant. Med. & Clin. Ther. **6**:461, 1959.

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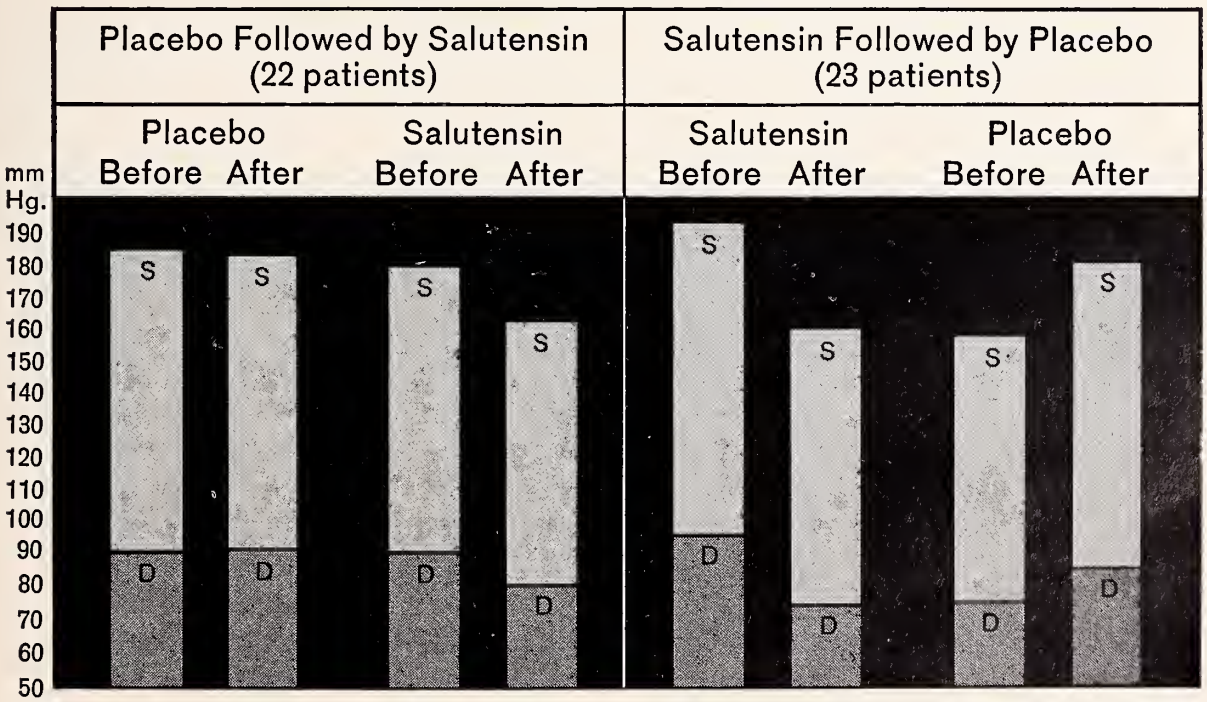
11 WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS BY SERIAL ADDITION OF THE INGREDIENTS IN SALUTENSIN IN A TEST CASE

(Adapted from Spiotta, E. J.: Report to Department of Clinical Investigation, Bristol Laboratories)



3½ WEEKS TO LOWER BLOOD PRESSURE TO DESIRED LEVELS USING SALUTENSIN FROM THE START OF THERAPY IN A "DOUBLE BLIND" CROSSOVER STUDY

Mean Blood Pressures–Systolic (S) and Diastolic (D)



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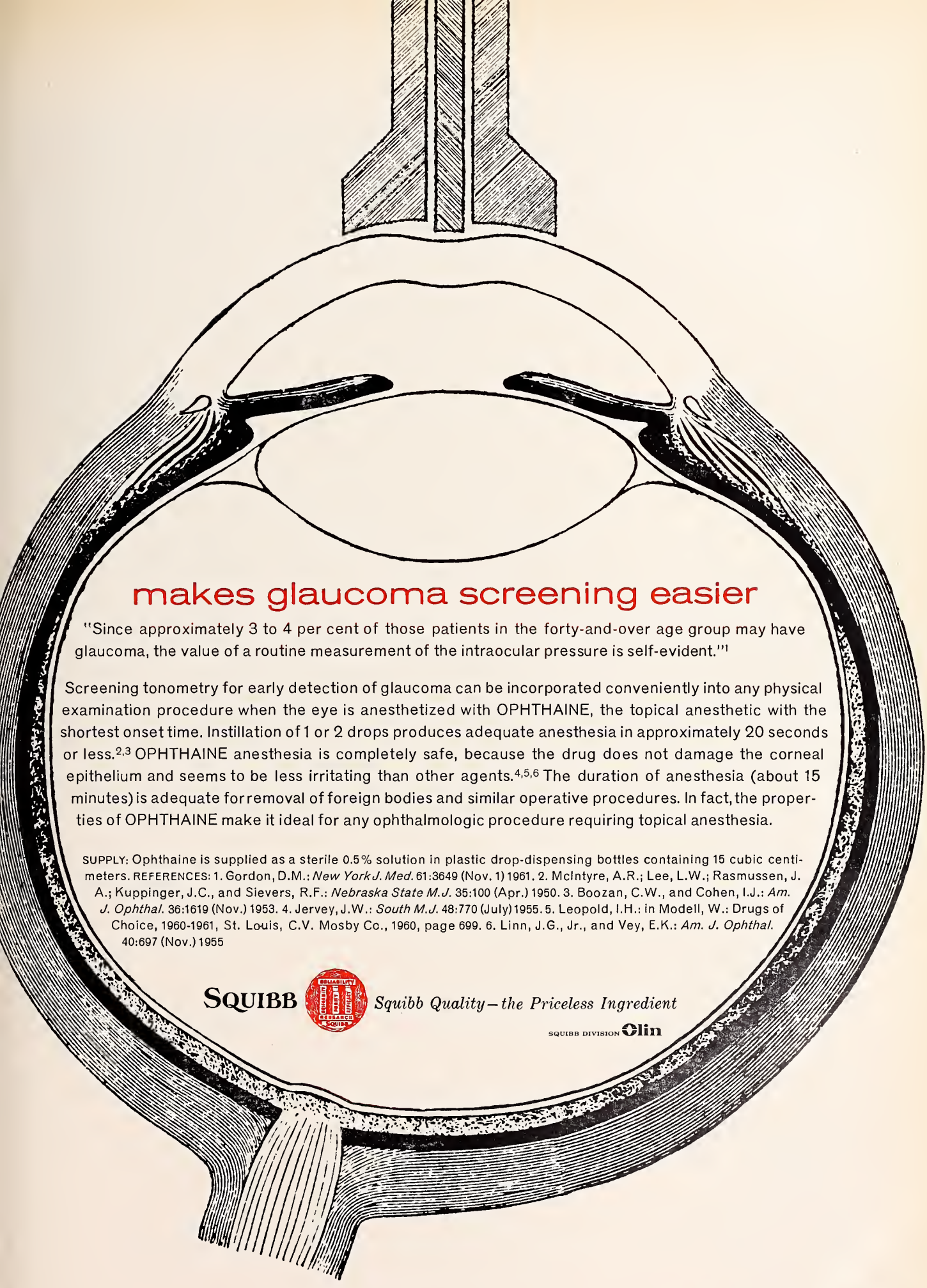
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REFERENCES: 1. Gordon, D.M.: *New York J. Med.* 61:3649 (Nov. 1) 1961. 2. McIntyre, A.R.; Lee, L.W.; Rasmussen, J. A.; Kuppinger, J.C., and Sievers, R.F.: *Nebraska State M.J.* 35:100 (Apr.) 1950. 3. Boozan, C.W., and Cohen, I.J.: *Am. J. Ophthal.* 36:1619 (Nov.) 1953. 4. Jervey, J.W.: *South M.J.* 48:770 (July) 1955. 5. Leopold, I.H.: in Modell, W.: Drugs of Choice, 1960-1961, St. Louis, C.V. Mosby Co., 1960, page 699. 6. Linn, J.G., Jr., and Vey, E.K.: *Am. J. Ophthal.* 40:697 (Nov.) 1955

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Medical Examinations for Disabled Indigents

To the Editor:

I am enclosing an article which I hope that you will find expedient to publish in the next issue of Arizona Medicine.

It is for the information of our members who will be doing the bulk of medical examinations for return to the Department of Public Welfare, so that the disabled indigents of the State can be accepted under the provisions of the 1962 enacted Public Welfare Act, H.B. 91, which went into effect July 1.

As explained in the article, it is not a medical care program, but a financial grant to the permanently and totally disabled, with federal participation on a matching basis.

As you perhaps know, I have been acting as medical consultant to this Department of Public Welfare for five years past. This new law has thrown a heavy burden of work on me as part of the review team — some 2,000 cases now pending — so that I am putting in two full afternoons a week attending to this job.

At our Board of Director's meeting just prior to the opening of the state medical convention, the Board of Directors determined that it would be well for a panel of doctors in each community to be appointed to do the physical examinations on applicants for financial relief under this program, and turned the matter over to the Professional Board for action.

To date this board has done nothing, and the program was activated July 1. Already, over 1,200 medicals done over the past few years have been received, with hundreds of others to follow.

Under these conditions it is not possible to wait for the Professional Board for action. So I have instructed the Commissioner of Welfare to prepare a letter to be sent to all our physicians who might want to do this type of examination.

This letter will be sent at the expense of the welfare department, and not the medical association. That seemed the sensible thing to do, in order not to delay medicals and acceptance of likely candidates for welfare financial assistance.

The chairman of the Professional Board has called a meeting of his committee Aug. 19 or 20. I have received an invitation to address them then about this program. I hope that they, yet, can be of some assistance, as directed by our Board of Directors.

Jesse D. Hamer, M.D.

HOUSE BILL 91; AN ACT RELATING TO WELFARE

25th Legislature, State of Arizona, 2nd Regular Session

Omnibus Bill, (H.B. 91) Section 46-232, relating to financial grants to indigent persons, directed the Department of Public Welfare to establish a program of Aid to the Permanently and Totally Disabled, effective July 1, 1962. This program will operate in conjunction with the federal government, with matching funds, as provided in the recently enacted and amended Public Welfare Law passed by the Congress.

This program is not a medical care program, nor does it apply to children under 18 years of age, who are cared for financially under the Aid to Dependent Children portion of the Welfare Act, nor to the over 65 year group of welfare recipients, who are now on the welfare roll under the old age assistance program.

Financial assistance only is involved, up to a maximum as provided by congressional and state public welfare laws, for persons between the ages of 18 and 65 years of age who are judged permanently and totally disabled.

This program is designed to meet the needs of persons who have a permanent and total major physical or mental impairment, medically verifiable and of such severity as to preclude gainful employment or performance of ordinary household activities and to impose limitations of mobility, communication, judgment, or physical strength that are not amenable to substantial improvement.

1. **Definitions**

a. *Permanently:* The term "permanently" refers to a continuing physiological, mental, anatomical, or emotional impairment with prognosis for no improvement verifiable by medical findings. The physician carries responsibility for providing the agency with the medical information required on a physical examination fur-

nished by the welfare department. The determination of permanent disability rests with a medical review team, consisting of a medical social work consultant, representative from the Welfare Department designated by the Welfare Commissioner, and a part time physician consultant to the Department of Public Welfare, who is a doctor of medicine.

b. *Totally:* The term "totally," like, "permanently," is not an absolute term implying that the individual must be confined to bed, chair, or institution. Totally involves additional considerations such as age, training, skills, and work experience, and the probable functioning of the individual in his particular situation in the light of his impairment, subject, however, to provisions of Paragraph C.

c. *Criteria for determining permanent and total disability.*

(1) The disability must arise from a *medically verifiable* physical, mental or emotional impairment of such severity as to substantially preclude any gainful employment or to preclude ordinary household activities.

(2) The medical findings must make it clear the condition is reasonably certain to continue indefinitely without substantial improvement.

(3) Persons with a combination of impairments are eligible if the combination constitutes a disability of equal severity to that of a single major disability.

(4) Need for supervision of persons with mental impairments shall be differentiated from need for confinement in a mental institution.

The determination of "Permanent and Total Disability" is made in the Department of Public Welfare of the State by a medical review team. This determination must be based on both the medical, as provided by the examining physician, and the social findings, as recorded by the local welfare agencies in each county.

2. **Medical examination:**

A medical examination by a duly licensed physician or specialist is required. The review team will have the authority to return any medical report for clarification, or to request an additional examination by a doctor or specialist designated by the department.

A comprehensive examination reported *in full* on Form DPW-371 will be paid for by the department for a fee of $10 to the examining physician, plus an essential lab work or X-rays up to an additional $15. Costs of the examination, lab work, x-rays, or examination by a specialist resulting in the *total* costs exceeding $25 must have the *prior approval* of the State Medical Consultant.

Other medical information which will be available to the department and which may be referred to the medical review team is medical information of Vocational Rehabilitation-Disability Certification Section, Industrial Commission, State Hospital, Veteran's Hospital Records, and the Public Health Service. (In fact, after July 1, 1962, medical examinations for Indians will not be paid for by the Department if the Indian is eligible for care by the U. S. Public Health Service.)

3. **Social Information:**

The social information summary will be prepared by the county welfare department and will supplement the medical report. It will provide the review team with the information necessary to arrive at a decision regarding the amount and kind of disability the impairment causes and will help both the social worker and the review team determine what services the disabled person needs.

The social summary will include information regarding the effect of the applicant's impairment on his functioning in his social and familial setting, his attitudes toward his disability, his prior education, and means of earning a livelihood.

It will be the responsibility of the review team to review both the medical and social information supplied to determine if the applicant is "permanently and totally disabled." The team *does not pass on eligibility* except to determine total and permanent disability. The review team's procedure on persons found to be permanently and totally disabled will have a date established for a required future review by the team, based on such considerations as irreversible impairments, future therapeutic advances, possibilities of spontaneous remission, etc., and, in such cases, resubmission of data to the team will be subscribed in advance to such possible expiration date in each such case.

This short summary of Public Welfare Law, H.B. 91 as related to medical determination of the total and permanently disabled indigent individuals in our state, and the necessity for carefully prepared medical reports setting out the required information needed by the medical review team for proper evaluation in each case

should arouse the physicians in our State to the necessity of using their very best judgment in answering the questions contained on medical form DPW-371.

At the state medical meeting late in April, 1962, this program was presented to the Board of Directors of our association, for an opinion on how best to handle the medical examinations. The Commissioner of Public Welfare was willing to accept any method endorsed by the Board of Directors. The board determined that the program would best be served by having a panel of physicians in each county handle the examinations. It referred the matter of activation of these panels to the Professional Board.

This committee of our association has not been able to meet and activate the program from the professional standpoint up to this time, and the program had to be started under State and Federal Law by July 1 1962. A letter from the office of the Commissioner of Public Welfare will be sent to all of the doctors of our State whose type of practice make them adaptable to do the routine medical examination. A form will be enclosed for each doctor to return to the Department of Public Welfare which will indicate his willingness or non-willingness to participate in this program.

It is anticipated that many of our members will cooperate with the department for this purpose.

For those who do participate, the medical review team will appreciate having a medical examination report that is as detailed as possible in the light of the questions contained. The physician's very best judgment should be used in classifying the major disabling disease.

In many of the examinations reviewed recently where the major disability involved the skeletal system, the physician inserted the word "arthritis." We would like to know what type of arthritis. Is it osteo, gouty, rheumatoid, or another classification?

Or the diagnosis, "heart disease." Is it rheumatic, coronary, arteriosclerotic, congenital, or another classified type?

An attempt should be made, if possible, to properly classify a psychotic, emotional, or mental degenerative process.

This type of information is lacking in sizeable percentage of available medical examinations now being reviewed. In a fair percentage of cases, it has been necessary to return the medical examination report to the local welfare office, requesting another examination.

It is hoped that many of our members will cooperate with the Department of Public Welfare in doing the medicals so that all the eligible, unfortunate permanent and totally disabled persons who are justifiably entitled to a limited financial grant under the welfare program can be classified as acceptable.

Jesse D. Hamer, M.D.
Medical Consultant
Arizona Department of
Public Welfare

REGARDING VOLKER ADDENDUM

To the Editor:

You will recall my phone call to you, last April, regarding Dr. Volker's letter to me in which he intimated that he had made arrangements with you to distribute his addendum to the members of our association.

Subsequently while in Tucson, I talked with you regarding a local press release in which Volker stated that Arizona Medicine would publish his addendum. I recall your amazement and indignation because you could not recall any such commitments.

I will not take exception to your final judgment in publishing Dr. Volker's addendum of February. However, I believe that equal time (space) should be given to possible contrary expressions.

Hence, I am enclosing a copy of my letter to Dr. Volker, dated April 3, 1962, and a sequel written at the same time.

These I had intended to send for possible publication. However, I decided to withhold them, believing that the less said then about a medical school would in the end enhance the cause for a medical school.

Because of Dr. Volker's evasion of the meaning of his statements (P 49A Arizona Medicine July 1962) by evoking the letter of his words, I now believe it is time to set the records straight.

I also believe it would be proper to reproduce the article by O. D. Miller.

Leslie B. Smith, M.D.

(Letter to Dr. Volker and sequel appear on the following pages – Ed.)

Correspondence

J. F. Volker, D.D.S. April 3, 1962

Dear Dr. Volker:

Your letter of 20 February 1962 with a copy of your letter to Doctor Jack E. Brooks and your letter of 27 February 1962 with a copy of the addendum to your medical school study report have been studied. In both of your letters to me you solicited my opinions and comments.

I wish that you had adhered to your decision as expressed to me during your recent visit to Phoenix, not to engage in a running debate or the publication of "refutations" of the criticism of the report.

Your concern about Dr. Brooks' indirect quotations of your statements during the meeting with the Medical School Committee of the Arizona Medical Association that a medical school at Arizona State University "would be above average" is further emphasized by the discussion in the addendum. Your exception to Dr. Brooks' quotation must be relative to the verbatim wording rather than the implied meaning of your statements.

Your opinions relative to the rank of a medical school at Arizona State University were made in reply to several questions directed by me. Although you may not have used the words "established in Maricopa County, utilizing the County Hospital," you did state that a medical school established at Arizona State University would be well above the average medical schools in the United States.

Your statements that your meeting with the Medical School Committee was "a closed dinner meeting with that group" and that there was "no verbatim transcription of the session" seem to imply that opinions expressed during that meeting should be held in secrecy and confidence.

If the repetition of your remarks has been a betrayal of confidence, I am sure that those who have done so were unaware of such.

It was the hope of your group that "all the people involved will accept the survey's recommendation wholeheartedly." The proposed solution of any, non-mathematical problem is rarely the perfect answer.

It is the belief of many that your report's recommendation that the Medical School be located at the University of Arizona was unduly weighted with the essentiality of accepting an intellectual academic achievement concept without sufficient consideration of other contingencies. Idealistic desires are frequently fractured by realities.

In order to maintain a well-balanced society, idealistic intellectual attitudes must be tempered with an admixture of the practical and the political attitudes. Also, we must remember that the advances in our society are frequently dependent upon the unique action potential of the practical-political individuals.

The people of Arizona need a medical school in their state to assure a high quality of medical care and a better health. The people are capable of analyzing the facts and reach conclusions as to how they can best provide for their needs. The people should not implicitly accept the directives of any named authorities without due consideration of the relative merits of the alternatives.

Now that your report can be supplemented with the alternative that a medical school at Arizona State University would be above average, the people, should they first decide to establish a medical school now, will consider all the facets and determine how they can provide for their needs.

They will have to decide whether the superior intellectual environment of a medical school transcends all other considerations and whether an "above average medical school," with a potential of improvement, will adequately fulfill their needs.

We recognize that products of the various types of schools are necessary for the total achievements in medicine. However, it does not necessarily follow that the graduates of our most highly intellectually oriented medical schools are those doctors who best serve the medical needs of the people.

The practice of medicine requires considered appropriate action which may not be accomplished by the creative inactivity of the intellectual visionary. This does not imply "that fundamental research and effective medical teaching are incompatible," but signifies that there must be a proper balance between the two.

The report states "almost all medical educators regard intimate affiliation with the strongest possible university as the decisive factor in locating a new medical school." There are many medical educators who do not subscribe to this premise and who believe that the greatest number of patients outweighs a primary consideration of the university academic achievements.

I believe that your inclusion of "almost all medical educators" is too broad a generalization.

Irrespective of your personal concern about the exceptions to your report, you can, forever, be proud of the quality of the work done by you and your staff.

We must recognize that those who implicitly endorse your report may be just as partisan as those who do not endorse all the conclusions.

We must now allow the people to assume their proper role and join with them in "a common and concerted effort to assure high (even though it need not be the highest by some definitions) quality medical education for the state."

Respectfully yours,
LESLIE B. SMITH, M. D.

M. D.'S OBLIGATION – RE: MEDICAL SCHOOL

The Arizona Medical School Study report, now commonly referred to as the Volker report, specified that a medical school should be established in conjunction with, and on the campus of, The University of Arizona. However, the report did not clearly discuss the relative quality of the professional training the students would receive in a medical school located in the Phoenix area affiliated with the Arizona State University.

It is fundamental that we know specifically the difference in quality of the professional training which would be given at the University of Arizona and at Arizona State University. If the graduates of a medical school at one location would be poor doctors in contrast to excellent graduates of the other location, there would be no disputing the location.

The Volker report favored the University of Arizona because of its academic superiority which in their opinion outweighs the teaching potential of the hospitals, facilities, available doctors, and patients in the Phoenix area. Their conclusion is disputed by many, including renowned medical educators.

Dr. Volker stated, January 17, 1962, during a "closed dinner meeting," with the Medical School Committee of the Arizona Medical Association, that the quality of professional education and training given by a medical school at Arizona State University would be good, and well above the average of that which is now available in the medical schools in this country.

Accepting, as many do, Dr. Volker and his committee's pre-eminence, we can now consider this postscript to his original report.

A medical school in our state is essential for the maximum improvement in the health care of our people. Very few of our citizens would settle for second best, although above average, if they could without undue sacrifice obtain the best.

The doctors of our state believe that the health needs of the people will be better served by the establishment of a medical school in Arizona, as evidenced by the resolution of the Board of Directors of The Arizona Medical Association (July, 1961) – "it is the overwhelming concensus of the physicians of Arizona that an early start must be made on the establishment of a medical school."

In 1958 the association favored establishing a medical school at such time as imminent need is manifest. In 1958 we expressed that a medical school should be established at a time when the state is able to pay the cost of a school equipped and staffed for medical education on a national competitive level of excellence.

Our association has only endorsed the Volker report in its conclusion that Arizona needs and can afford a medical school, we did not endorse that portion of the report which specified a specific location.

It is now apparent that a school at Arizona State University or the University of Arizona would qualify, therefore, we should unify our efforts for a medical school and leave it up to the people and their elected legislators to decide the location.

If we, as doctors, continue our adamant opposition to this or that location, based on minor differences of academic proficiency and our geographic prejudice, the public will share our confusion and possibly conclude that our basic premise – that we need a medical school – is false and be suspicious that our motives may be selfish.

Let us not continue in an ambigous vein with open haggling, through all communications media, as to the pros and cons of the idealistic conclusions of the Volker report.

We should fulfill our public obligation by deciding which one of these schools can be obtained, and go all out to support that effort.

We should nullify the statement that "The Arizona Medical Association ought to have itself psychoanalyzed."

LESLIE B. SMITH, M. D.

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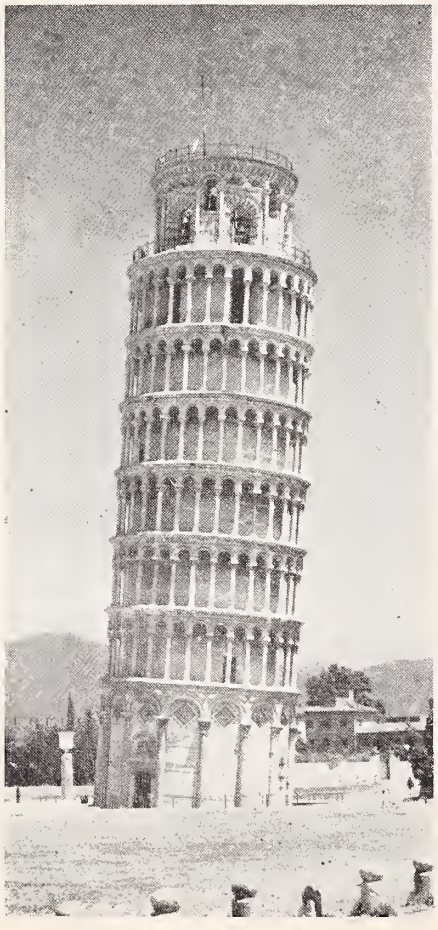
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1. Methyl-Testosterone-Thyroid in Treating Impotence, A. S. Titeff, General Practice, Vol. 25, No. 2, February, 1962, pp 6-8.
2. Thyroid-Androgen Relations, L. Hellman, et al., The Jrl. of Clin. Endocrinology and Metabolism, August 1959.

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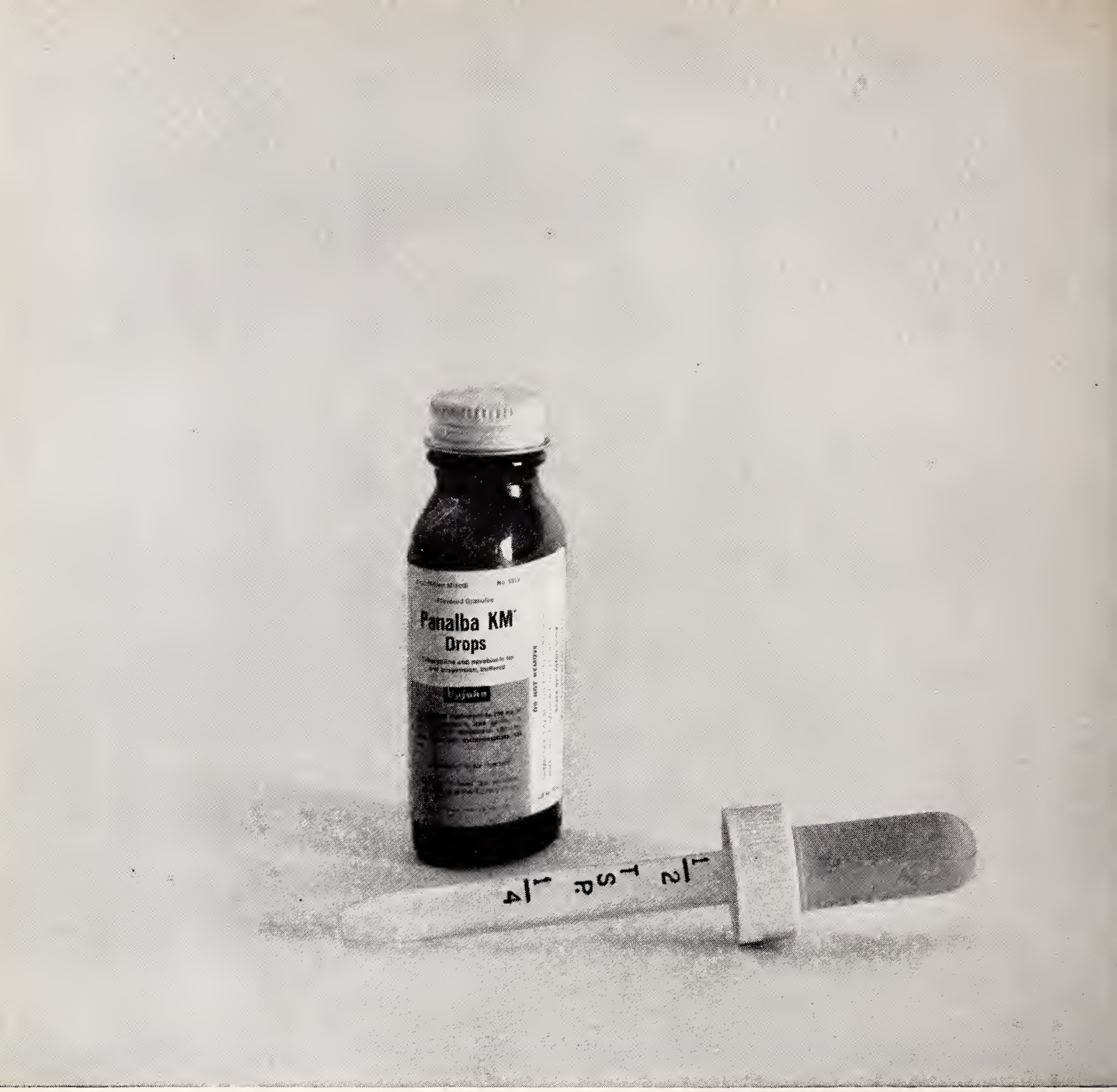
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Thursday — October 11

11:00-12:00 a.m. Registration

2:00- 4:00 p.m. 1. Therapy and changing pattern of severe hypertension
2. How and when to treat moderate hypertension
Speaker: H. Mitchell Perry Jr., M.D.
George Washington University
Washington, D. C.
Moderator: George W. King, M.D.
Panelists: John F. Christianson, M.D.
Clarence L. Robbins, M.D.

Friday — October 12

9:00-11:00 a.m. 1. Newer concepts in erythrocyte metabolism as related to the anemias
2. Drug induced blood dyscrasias — early recognition and treatment
3. Examination of blood smear and prescription of anemias
Speaker: Maxwell Wintrobe, M.D.
The University of Utah
Moderator: John Carlson, M.D.
Panelists: Ralph A. Jackson Jr., M.D.
James D. Barger, M.D.

12:00- 2:00 p.m. AAGP luncheon and annual business meeting
Women's luncheon

2:30- 4:30 p.m. 1. Office diagnosis of operable congenital heart disease
2. Development of the personality
3. Common sense in infant feeding
4. Tricks of the trade
Speaker: Robert A. Tidwell, M.D.
Chief of Cardiology
Seattle Children's Orthopedic Hospital
Moderator: Herbert Brown, M.D.
Panelists: Richard B. Johns, M.D.
Ernest W. Eberling, M.D.

6:30 p.m. Cocktails, followed by president's dinner

Saturday — October 13

9:00-11:00 a.m. Practical Psychiatric Procedures in General Office Practice
Speakers: Allen J. Enelow, M.D.
Edward J. Stainbrook, M.D.
Psychiatric Department
University of Southern California
Medical School
Moderator: John A. Jones, M.D.

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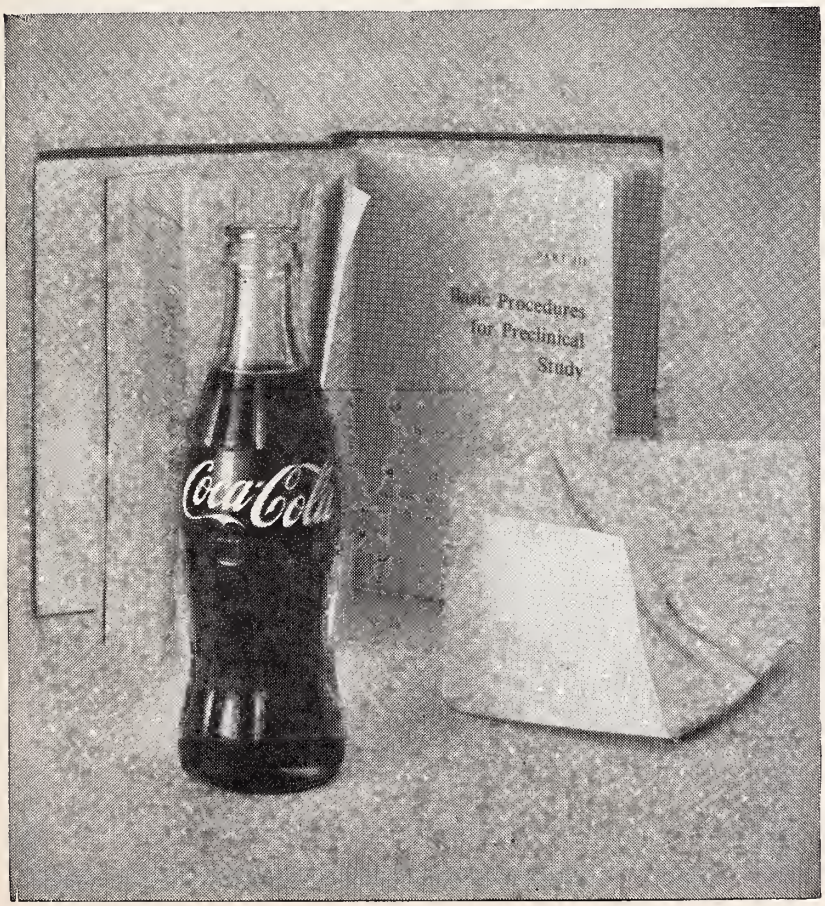
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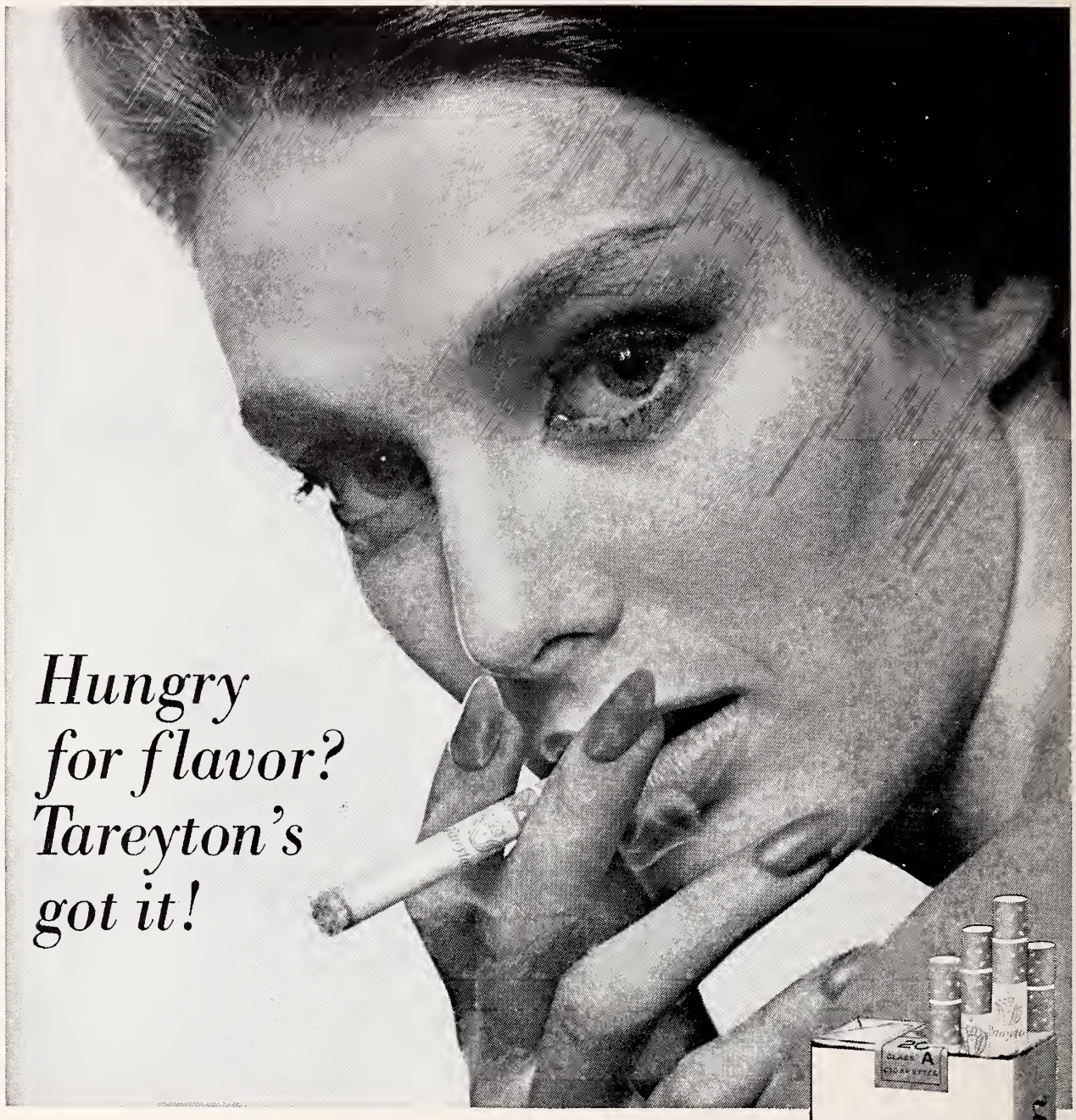
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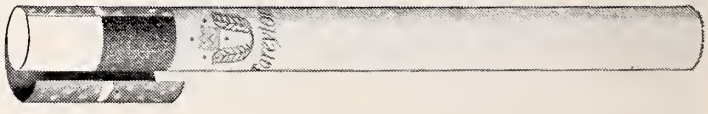




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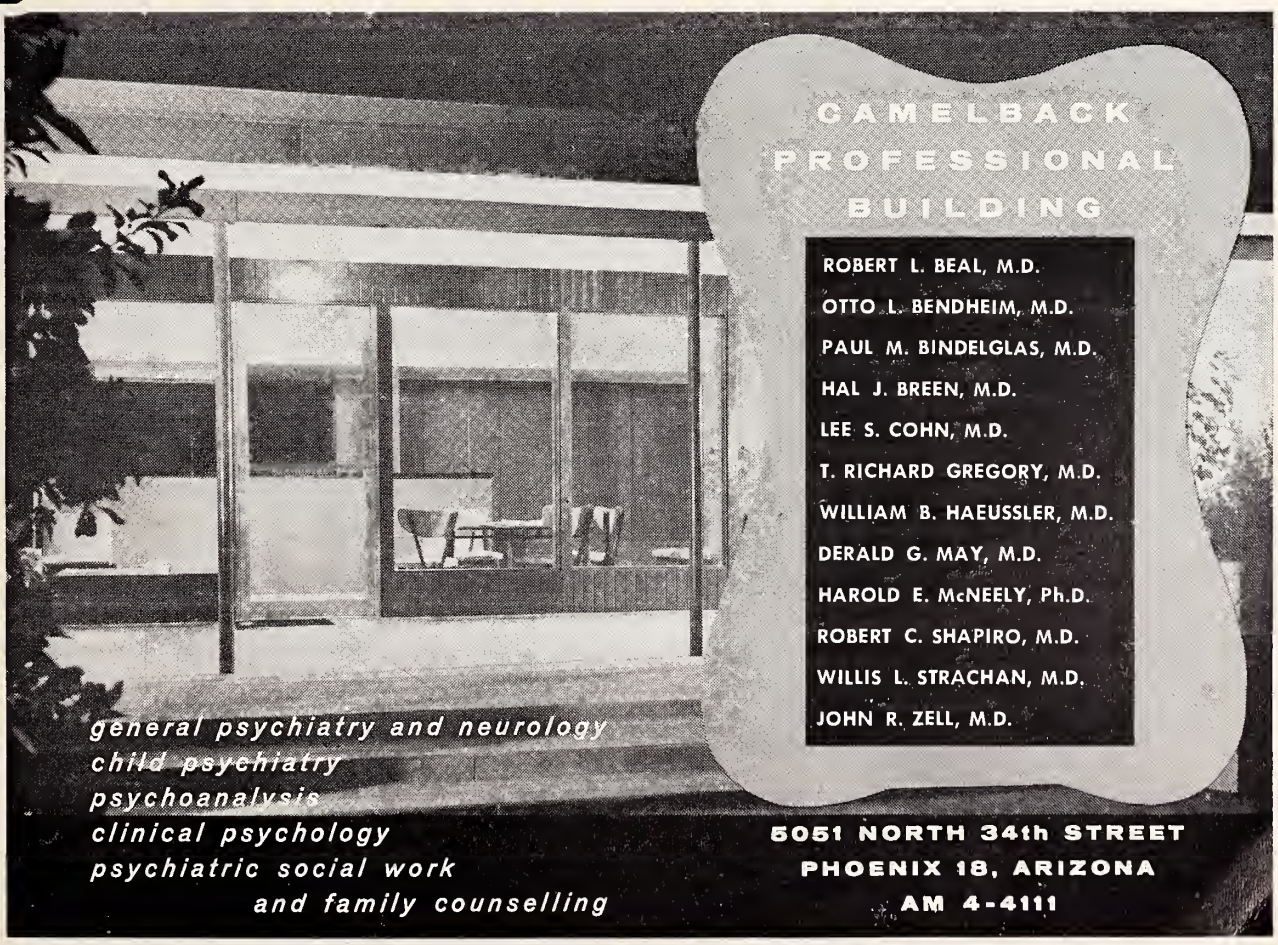
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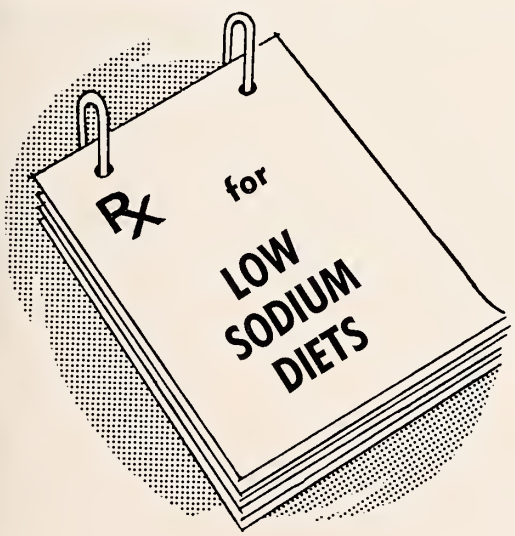
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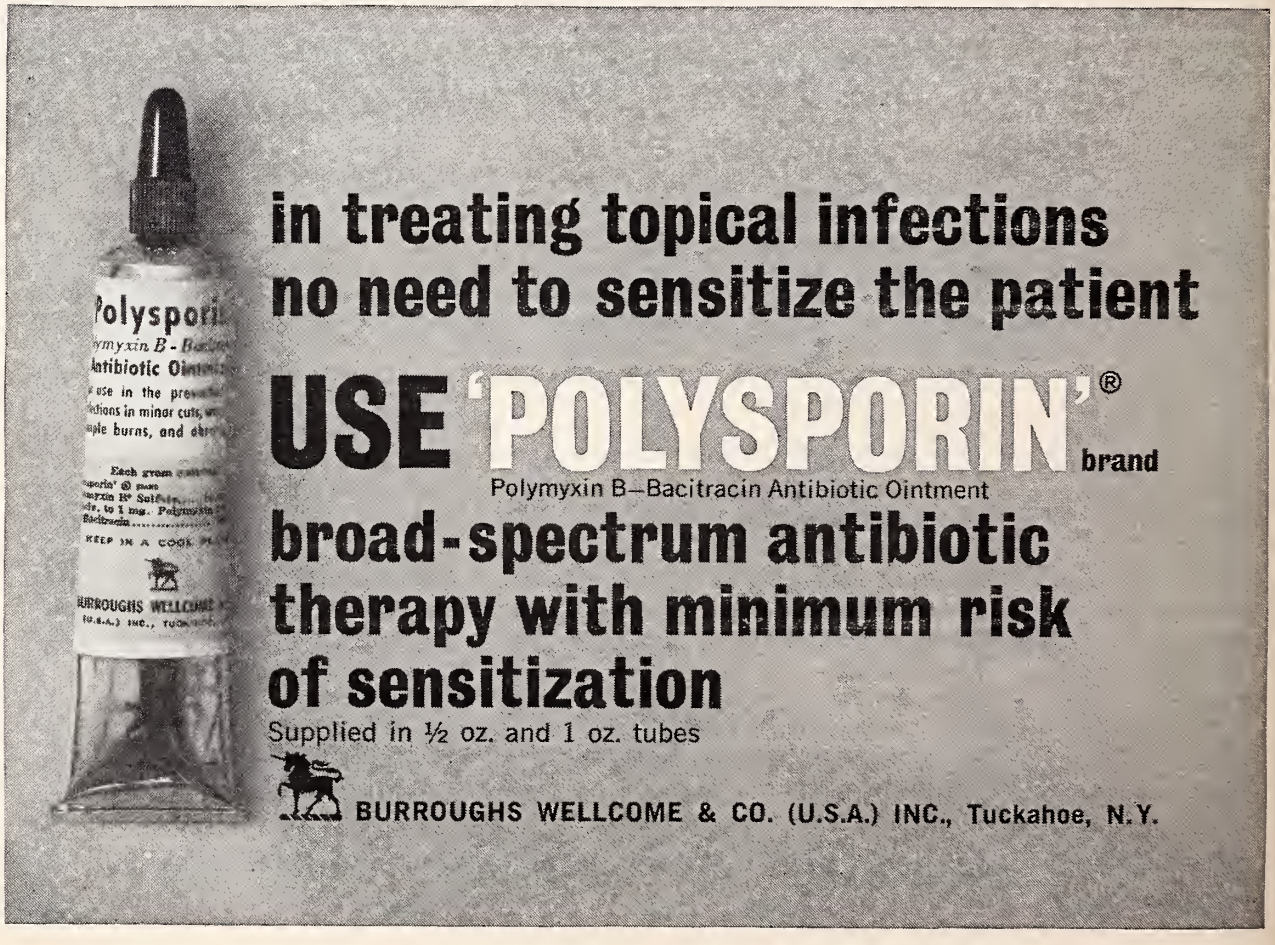
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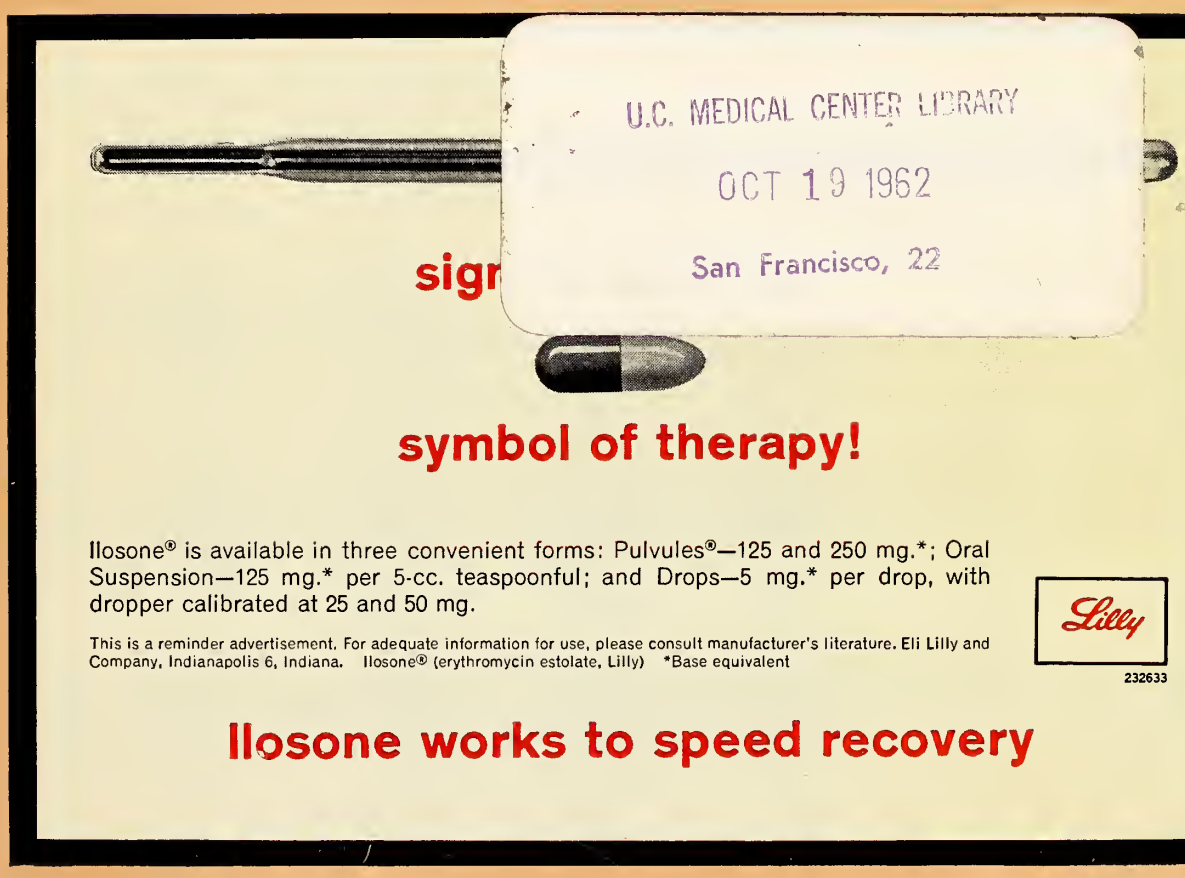


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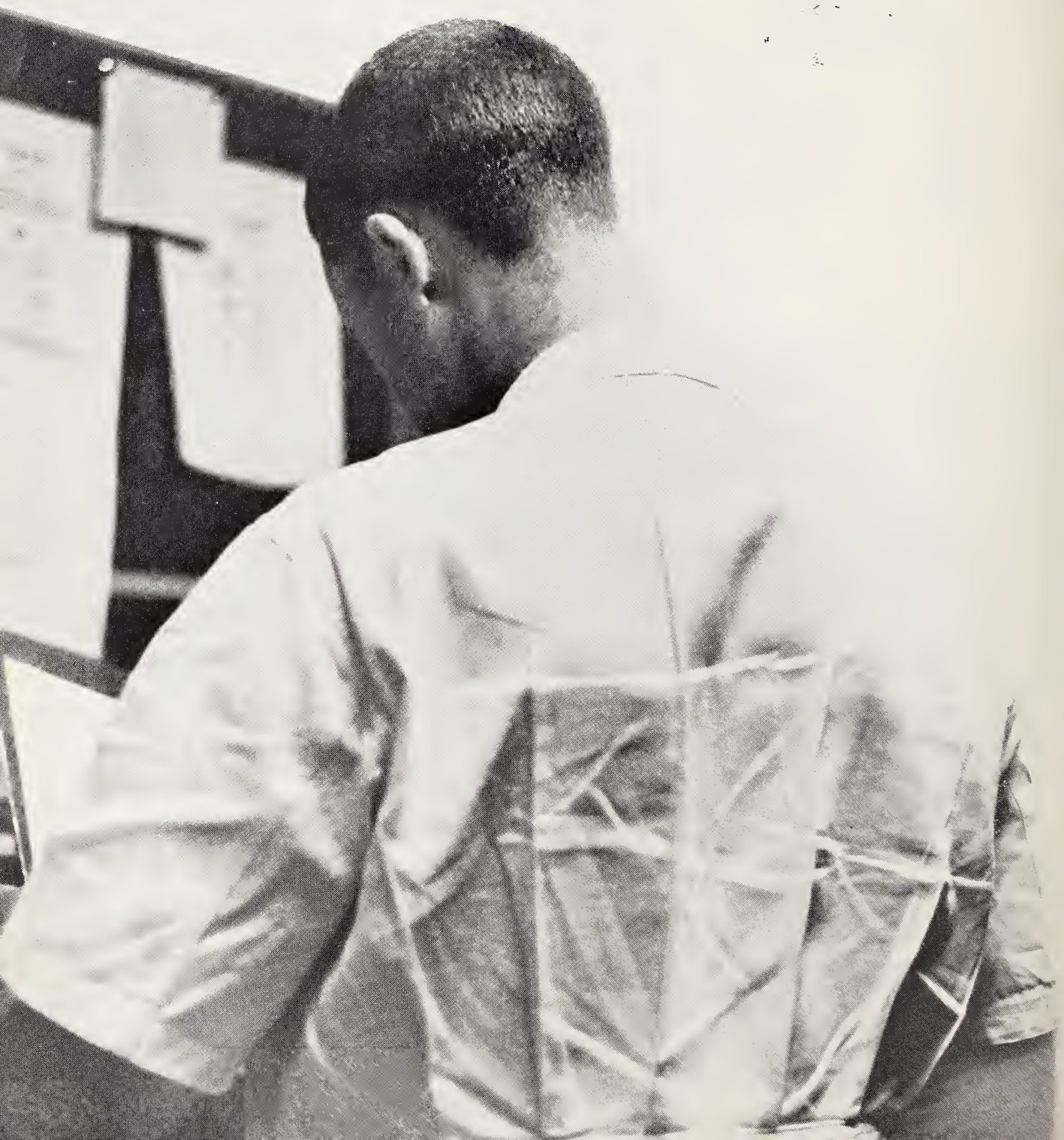
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References: (1) Katz, Y. J., & Bourdo, S. R.: *Pediat. Clin. North America* **8**:1259, 1961. (2) Malone, F. J., Jr.: *Mil. Med.* **125**:836, 1960. (3) Ullman, A.: *Delaware M. J.* **32**:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* **108**:48, 1961. (5) Whitaker, L.: *Canad. M. A. J.* **84**:1022, 1961. (6) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* **34**:187, 1959.

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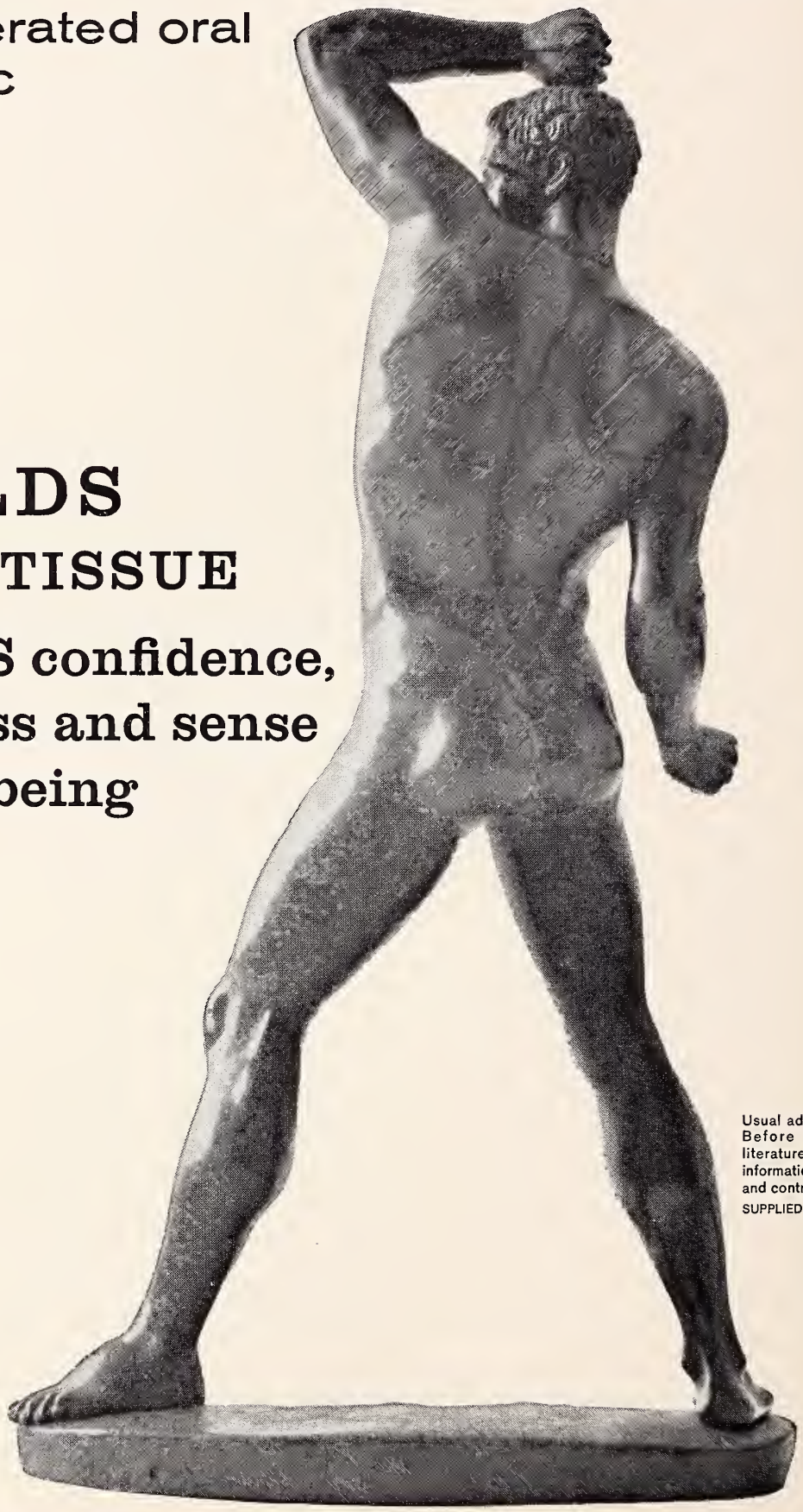
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Arizona Medicine

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MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

October, 1962 Vol. 19, No. 10

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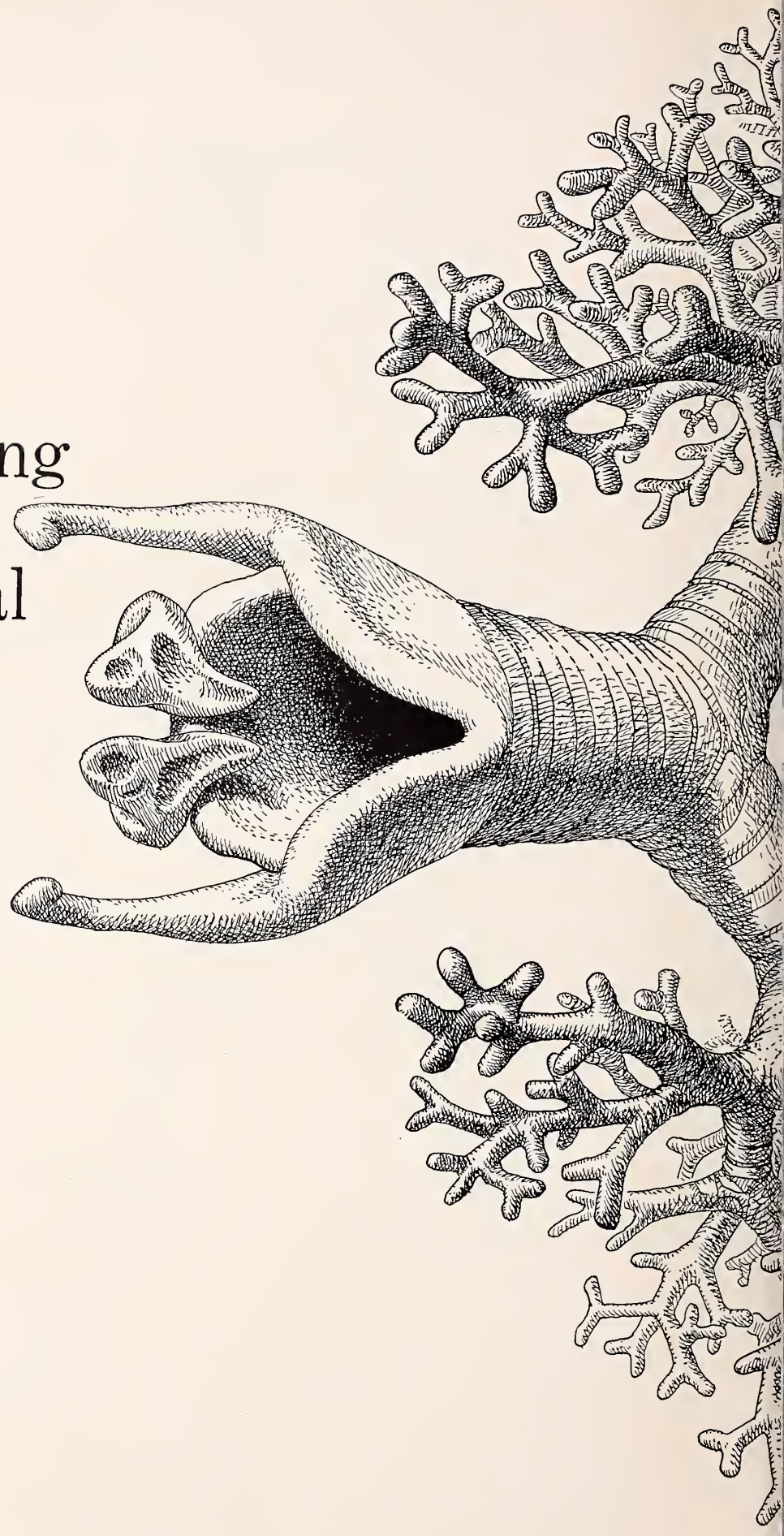
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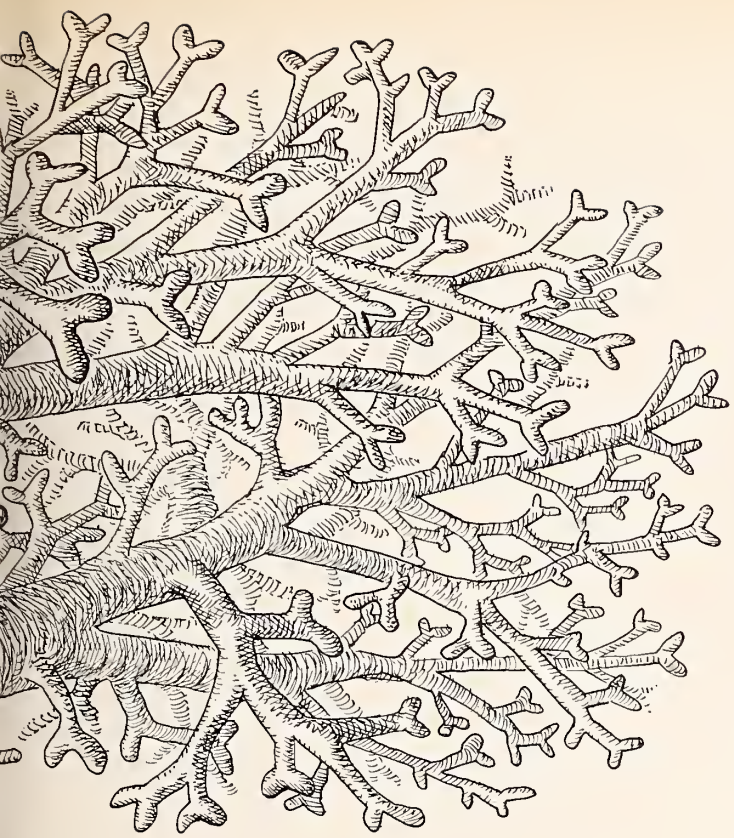
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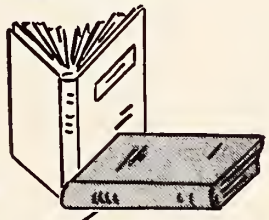
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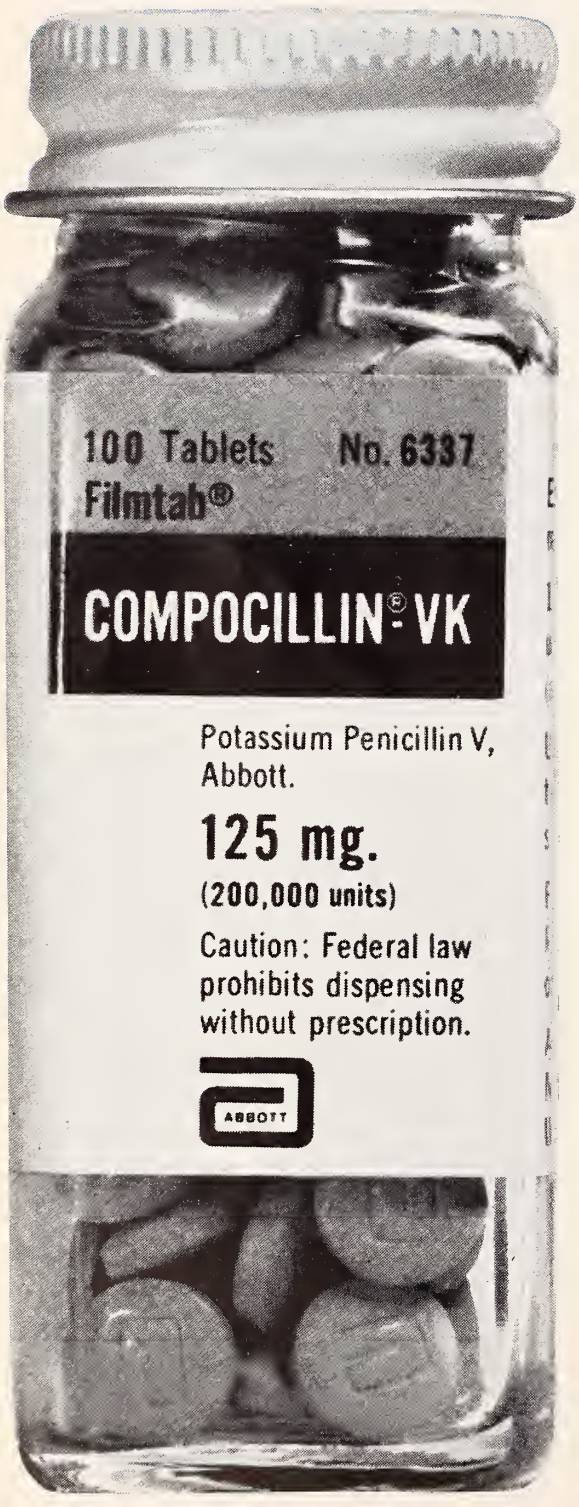
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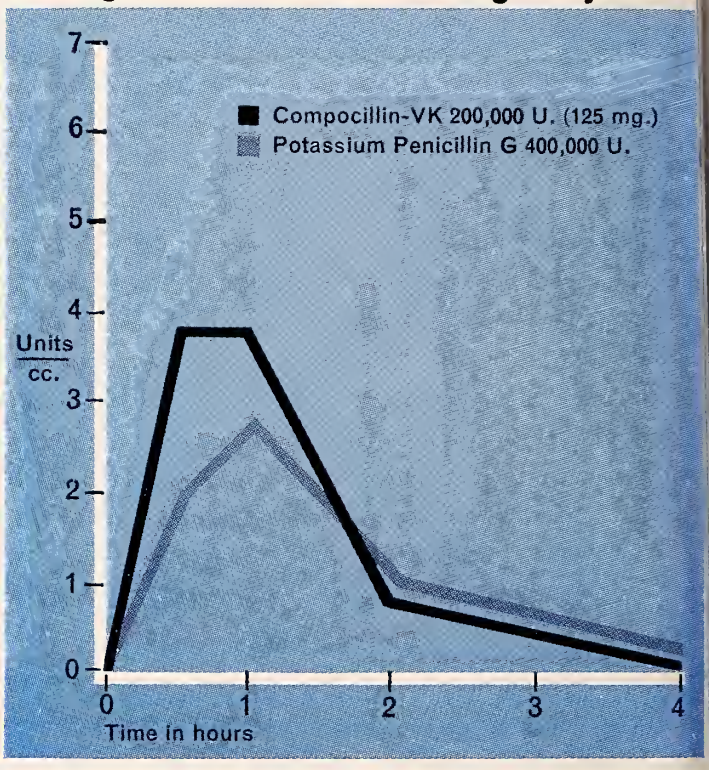
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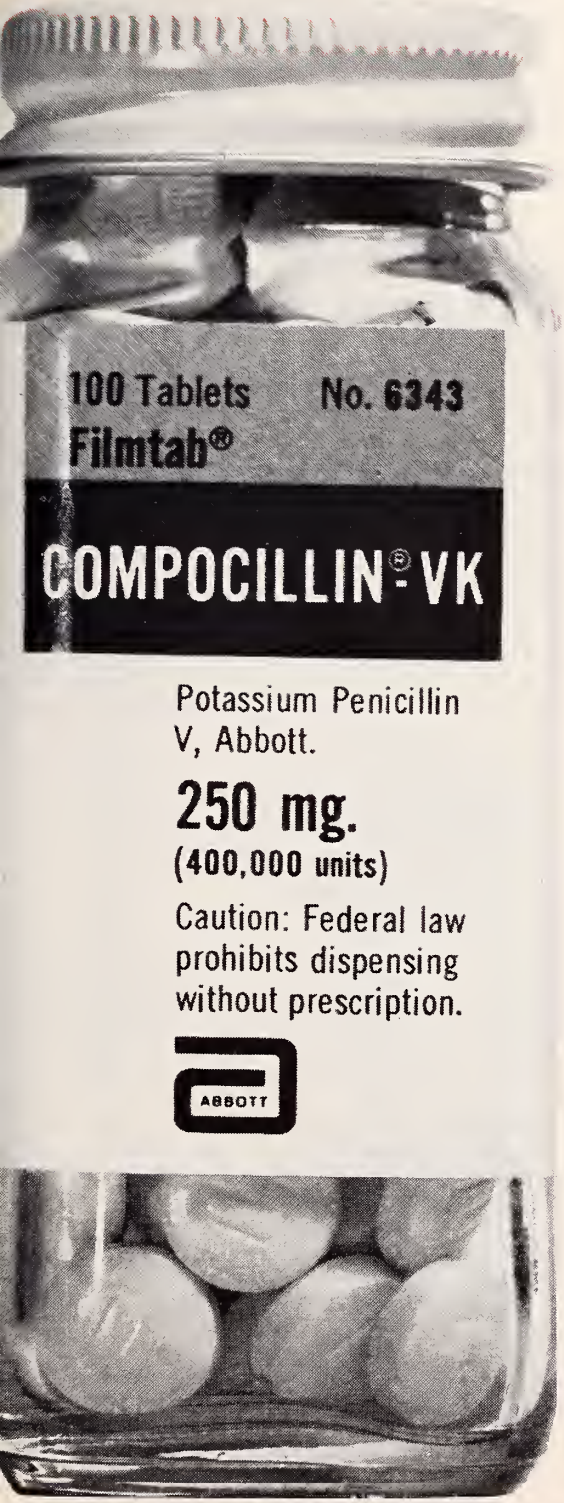
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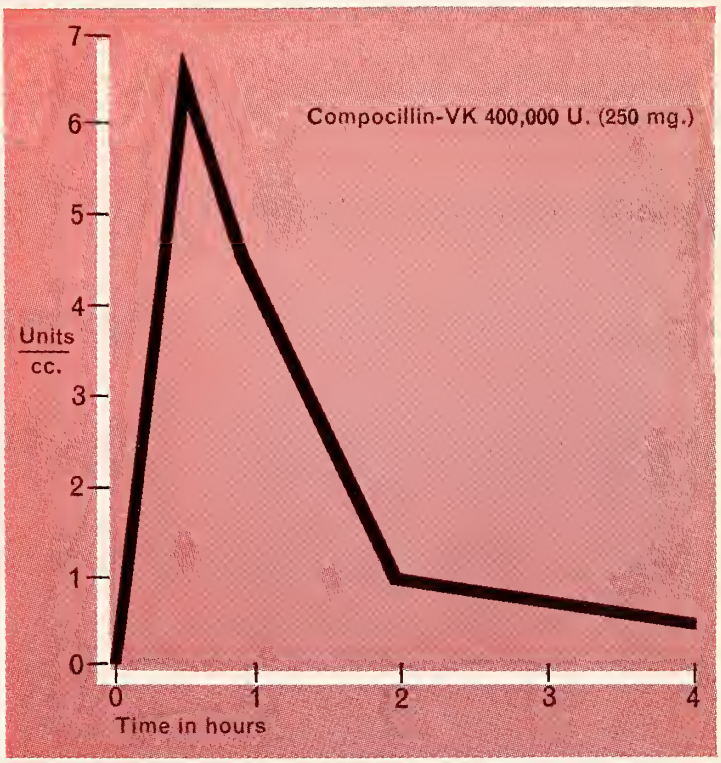
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Student Nurse Loan Fund.Mrs. Howard M. Purcell, Jr. (Pauline)
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Gila County Mrs. Ellis L. Pollock (Elsie)
Box 1745, Miami, Arizona

Maricopa County Mrs. Robert L. Gullen (Beverly)
5003 N. 22nd Street, Phoenix 16, Arizona

Pima County Mrs. Juan E. Fonseca (Virginia)
Rt. 2, Box 741, Tucson, Arizona

Yavapai County Mrs. Albert O. Daniels (Jean)
Box 1311, Prescott, Arizona

Yuma County Mrs. Paul J. Slosser (Betty)
701 8th Avenue, Yuma, Arizona

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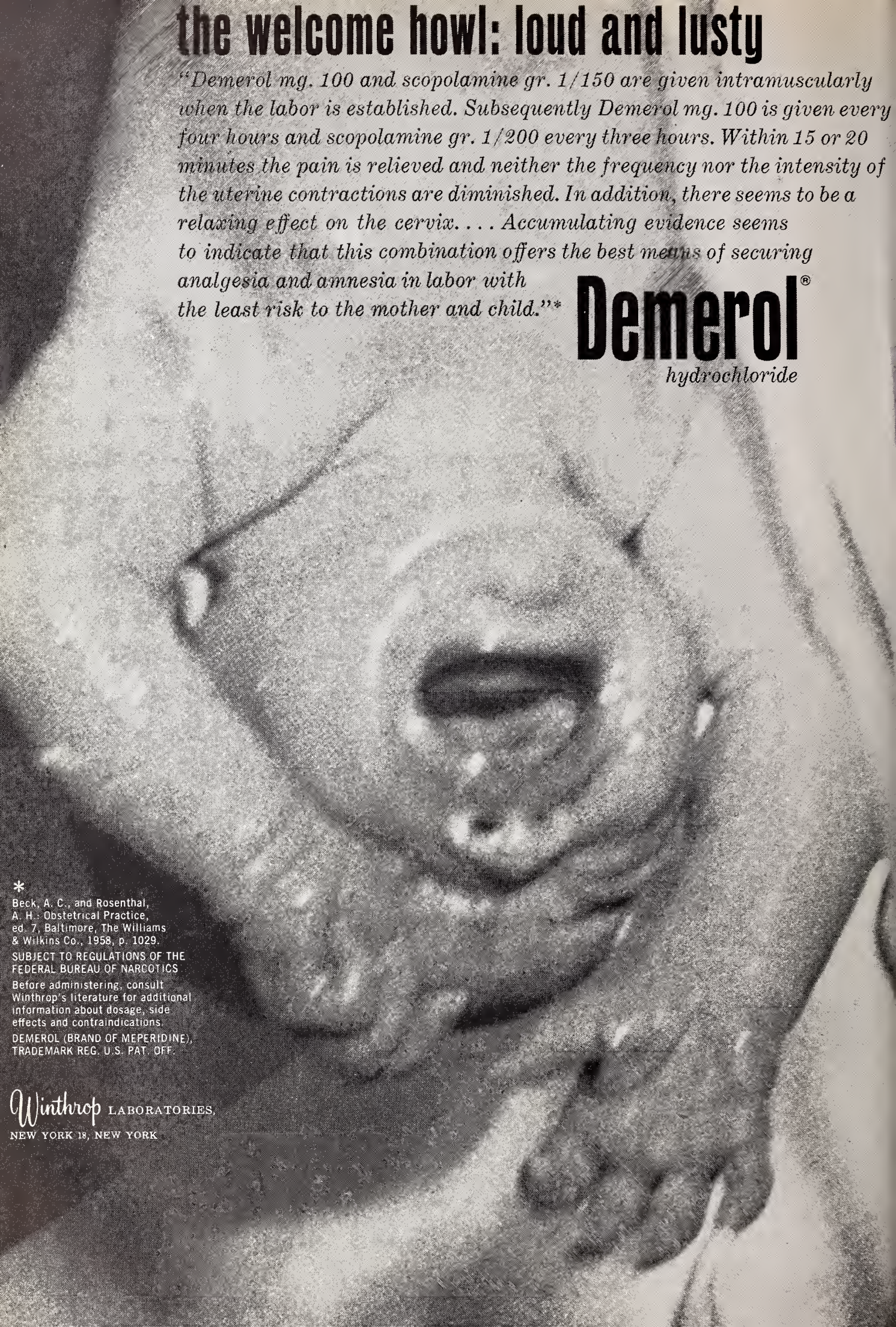
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* Beck, A. C., and Rosenthal, A. H.: Obstetrical Practice, ed. 7, Baltimore, The Williams & Wilkins Co., 1958, p. 1029.

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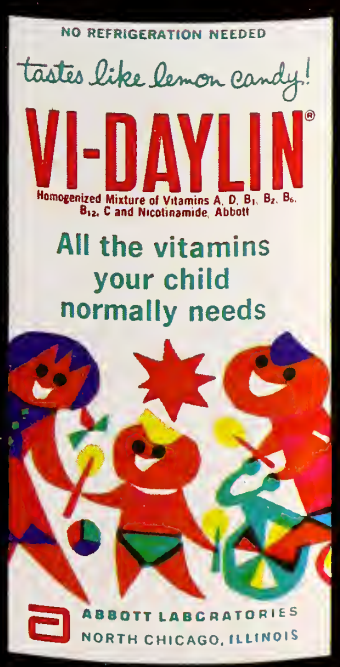
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Thiamine HCl (B_1)	1.5 mg.	2	6
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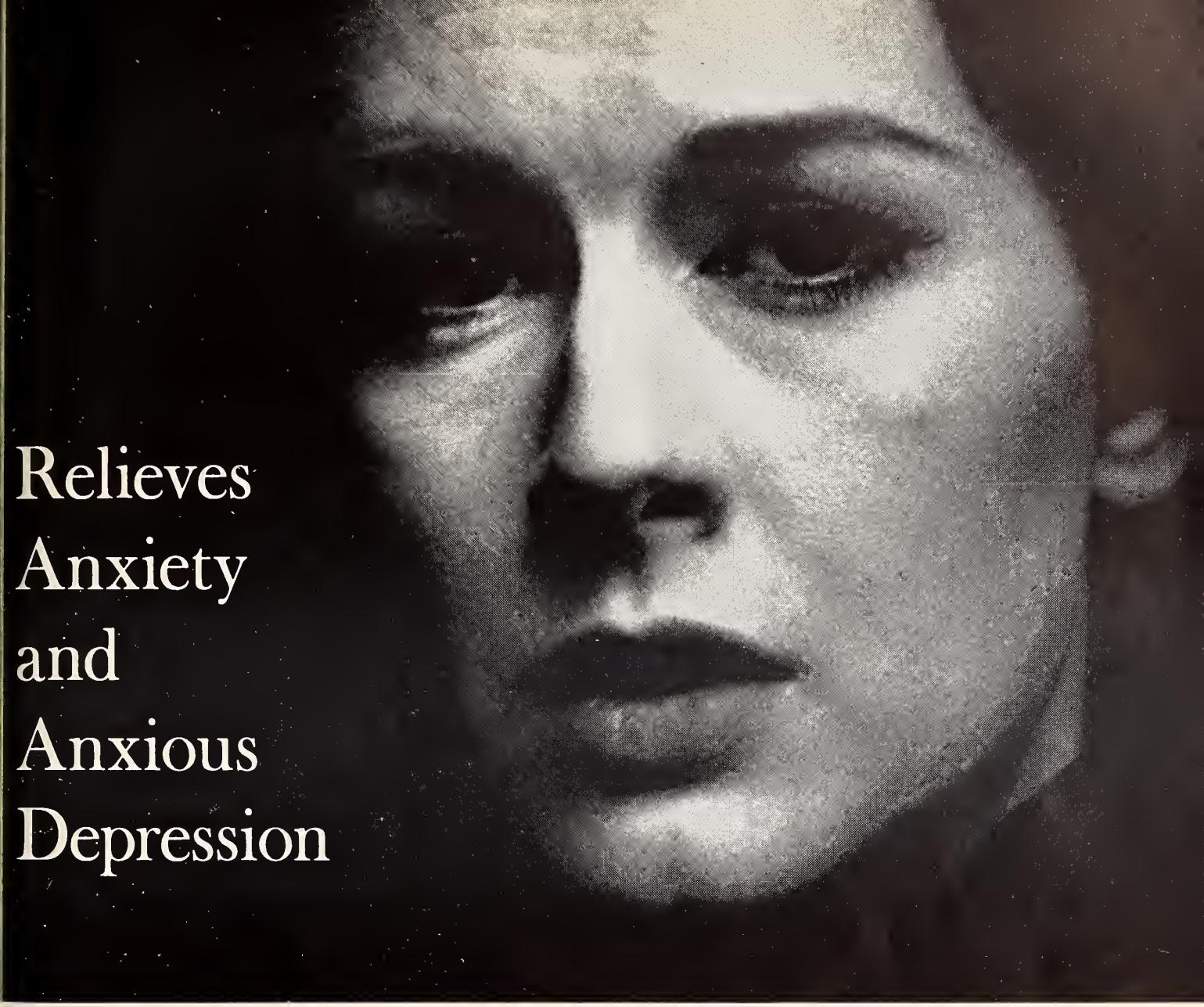
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LEGISLATIVE COMMITTEE
July 29, 1962

The Legislative Committee and the Articles of Incorporation and By-Laws Committee convened at a joint meeting July 29, 1962, Scottsdale, Arizona.
Present:

Membership
Dr. Ben P. Frissell, chairman
Dr. John S. Carlson
Dr. Jesse D. Hamer, co-chairman
Dr. Charles E. Henderson, secretary
Dr. Paul B. Jarrett
Dr. W. Shaw McDaniel
Dr. William B. Steen, president-elect
Dr. Clarence E. Yount Jr., president

Advisory Membership
Dr. De Armond Lindes
Dr. Theodore C. Harper
Dr. Walter Brazie
Dr. Leo L. Lewis
Dr. Albert O. Daniels
Dr. Abe I. Podolsky

Chairman, Committee on National Legislation
Dr. Leslie B. Smith

ARMA Resolution No. 10
Legislative Procedures

Legislative procedures were discussed in detail by both committees as follows:

Resolution No. 10 was adopted by the House of Delegates on April 27, 1962: (for complete resolution see ARIZONA MEDICINE, August, 1962).

> "THEREFORE BE IT RESOLVED, that the By-Laws Committee, after consultation with the Legislative Committee, the Executive Committee and such other persons as they deem necessary, make a study of our legislative activities and recommend changes in the by-laws which will provide for a more effective legislative functioning, and
> "BE IT FURTHER RESOLVED, that a study be made of the cost of our legislative activities in view of determining a realistic budget."

Chapter VII, Section 4 (e) of the By-Laws of The Arizona Medical Association, Inc. reads as follows:

> "LEGISLATIVE: — This committee shall consist of a chairman and at least eight other members and shall be appointed on a geographic basis. Subject to the approval of the board, it shall represent the association in securing and enforcing legislation in the interest of public health and of scientific medicine, and in preventing the passage of, or securing the repeal of legislation contrary to those interests. No county society, group of members, or individual members shall advance any medical legislation on a state or national level as representative of the association without obtaining the consent of this committee."

It was conceded that under emergency circumstances, the chairman of the Legislative Committee should have some authority to turn to for an official decision especially during the course of a legislative session. At that time action dealing with legislation must be made promptly and sometimes daily. A mail vote for a decision of the Board of Directors requires time to procure.

Past experiences were outlined by Dr. Smith and Dr. Hamer, the latter having been chairman of the Legislative Committee for several years past.

Dr. Jarrett was of the opinion that there should be no by-laws amendment now. The view was expressed that such instrument should be broad in scope and not too detailed in directive in order to give the committee some latitude in operation. The existing provision appeared to meet this criteria.

It was decided that the committee should request that the Board of Directors adopt a resolution setting forth specific rules, regulations and/or procedures as a guide for operation to be followed by the Legislative Committee in emergencies. It was agreed that there appeared to be no indication at present for an amendment to the by-laws dealing with this subject.

It was also pointed out that the committee had sought clarification of its responsibilities frequently in the past, i.e., is it to consider legislation needed or desirable, or shall it limit its activity to that of seeking enactment of legislation approved and referred to it by the Board of Directors.

The Legislative Committee voted to go on record as feeling that the problem could be handled without a change in the by-laws of the association now.

It was moved by Dr. Steen, seconded by Dr. Lindes and unanimously carried that the Legislative Committee request of the Board of Directors a definition of the functions of this committee and an outline of procedural format under emergency conditions; and that the Board of Directors grant authority to the committee to act in those instances where time does not permit or where it is found inexpedient to await a decision of the Board of Directors; and that the chairman of the Legislative Committee or the Legislative Committee be empowered to act in such instances after consultation with the Executive Committee.

In the matter of directive (Resolution No. 10) "that a study be made of the cost of our legislative activities in view of determining a realistic budget," it was unanimously carried that the chairman of this committee appoint a subcommittee to study the cost of legal services and present recommendations as to what should be the future course.

Dr. Frissell appointed Drs. McDaniel, Hamer and Jarrett to serve on this committee.

ARMA Resolution No. 9
Hospital Staff Committee's Deliberations

Resolution No. 9, was adopted by the House of Delegates April 27, 1962 as follows: (for complete resolution see ARIZONA MEDICINE, August, 1962).

> THEREFORE BE IT RESOLVED, that The Arizona Medical Association, Inc. duly convened on April 25-28, 1962 does affirm and approve these principles of procedures of hospital staffs and hospital staff committees, and
> BE IT FURTHER RESOLVED, that the House of Delegates of The Arizona Medical Association, Inc. instruct the Legislative Committee of this association

to study and recommend proper legislative proposals for a bill for enactment by the House and the Senate of the State of Arizona."

There was considerable discussion with review of knowledgeable practices and procedures followed referable to such deliberations.

The Legislative Committee voted unanimously that the subject be referred to counsel for his review and comments. The president approved this action.

Amendment
Chapter IV, A.R.S. 1956
Basic Science Certification

The executive secretary, Mr. Robert Carpenter, reviewed the background leading up to the directive of the Board of Directors last year that Chapter IV, A.R.S. 1956 be amended to clarify and adequately provide for partial and complete reciprocity associate with basic science certification based on the recommendation of the Legislative Committee.

Counsel was instructed to and did prepare the amendment. Accepted was the following portion of the proposed amendment:

"Certification that he has successfully passed an examination given in the basic sciences by a basic science board of a state or territory of the United States the requirements for which are deemed by the board to have been equivalent, at the time of such examination, to the requirements of this state at the time of such examination, to the requirements of this state at the time of the application for reciprocal endorsement."

Another section recognizing reciprocity endorsement of the National Board of Medical Examiners was deleted.

It further developed that the existing statute does not provide for partial reciprocity. Counsel had been directed to review this phase on reciprocity and include a provision for it.

It was anticipated that the completed amendment would be in the hands of the committee prior to introduction into the first regular session of the 26th Arizona State Legislature to convene in January, 1963.

Chapter 13, A.R.S. 1956
(Amended 1961)
Medicine & Surgery Act Revision

The executive secretary reviewed events leading up to the determination of the need for a revision of the current Medicine and Surgery Act. This included the preparation and holding of a series of meetings to determine medical policy considered by the Board of Medical Examiners of the State of Arizona and the Board of Directors of the association, and final authorization of draft by counsel.

It was hoped that the measure would be completed for introduction into the next session of the Arizona State Legislature and that a draft would be presented for committee review prior to the end of this year. It was the expressed desire of the Board of Directors that this objective be given first priority by this committee.

Criminal Code
Abortion

Sections 13-211 and 13-212 of the Criminal Code, A.S.R. 1956, Abortion: Definition; punishment, reads as follows:

"A person who provides, supplies or administers to a pregnant woman, or procures such woman to take any medicine, drugs or substance, or uses or employs any instrument or other means whatever, with intent thereby to procure the miscarriage of such woman, unless it is necessary to save her life, shall be punished by imprisonment in the state prison not less than two years nor more than five years."

Soliciting abortion; punishment; exception:

"A woman who solicits from any person any medicine, drug or substance whatever, and takes it, or who submits to an operation, or to the use of any means whatever, with intent thereby to procure a miscarriage, unless it is necessary to preserve her life, shall be punished by imprisonment in the state prison for not less than one nor more than five years."

This subject was reviewed because of the recent much publicized case on a foreign drug, "thalidomide." It was determined to follow the legal proceedings before the court and possibly, at a later date, determine any need indicated requiring amendment to the existing statuates.

Criminal Code
Advertising to Produce Abortion
or Prevent Conception

Section 13-213 of the Criminal Code, A.R.S. 1956, Advertising to Produce Abortion or Prevent Conception; punishment, reads as follows:

"A person who wilfully writes, composes or publishes a notice or advertisement of any medicine or means for producing or facilitating a miscarriage or abortion, or for prevention of conception, or who offers his services by a notice, advertisement or otherwise, to assist in the accomplishment of any such purposes, is guilty of a misdemeanor."

In 1961, this Association sponsored a measure introduced in the Senate of the Arizona State Legislature, numbered S.B. 121, providing an amendment to Section 13-213, set forth above, deleting the phrase: "or for prevention of conception". It failed of enactment.

The purpose of this amendment was to make it no longer a crime to distribute proper information concerning birth control in the belief that the present law was medically unsound and that it was a medical necessity for the public health of the people of this state that the free and unfettered distribution of matters concerning medical science be not made a criminal offense.

The committee felt that there appeared continuing interest in such measure and that further consideration and possible reintroduction should be given when indicated.

Animal Vivisection

Dr. John R. Green, Director, Barrow Neurological Institute, by letter June 25, 1962, sought information regarding the procurement of animals, especially cats, associate with the operation of its Division of Neurobiology; and by letter July 16, 1962 expressed the belief that the way should be prepared now for the use of laboratory animals, especially in the light of the proposed medical school.

During the regular session of the 20th Arizona State Legislature, this association introduced a measure in

the House of Representatives becoming H.B. 84, providing for the viviseetion of animals, etc. It passed the House; however, it was held up in the Senate, failing of enaetment.

The House of Delegates of this assoeiation in annual meeting April 28, 1961, adopted Resolution No. 14, deelaring that this association is unalterably opposed to all legislation dealing with animal experimentation under consideration by the Congress of the United States which would impede scientifie progress in the advaneement of the medieal sciences and the relief of human suffering.

It was moved by Dr. Lindes, seconded by Dr. Carlson and unanimously earried that this Legislative Committee reeommend to the Board of Direetors that consideration be given to the reintroduetion of a similar measure (H.B. 84) into the Arizona State Legislature at present.

Public Law 86-778
86th Congress
Kerr-Mills Implementation

In line with directive of the Board of Direetors to the Legislative Committee, Drs. Carlson, McDaniel and Frissell, the latter subeommittee ehairman, met to further explore possibilities of implementation of the Kerr-Mills law through the State Welfare Board, and of working with legislators in this respect. A joint report was submitted reviewing past aetivity. Enabling legislation was prerequisite for implementation of the program in this State, and that lack of resideney requirement in the (Kerr-Mills) law as it stands was a deterrent to the passage of sueh legislation in this area. A recent opinion of the Attorney General's office on this matter indieates that the states do have eonsiderable diseretionary power in determining eligibility of applicants for programs.

The subeommittee recommended implementation of those portions of Title VI of the Kerr-Mills legislation in Arizona — that portion relative to "medieal assistanee to the aged (MAA)". It was its feeling that there was no indieation for provision for the old age assistanee phase of the program (OAA) inasmuch as fairly adequate eoverage for the indigent group is provided in most areas of the state, and further that this seetion of the law was impraetieal due to the absenee of provisions for vendor type care in the majority of areas in the state.

It was understood enabling legislation ean best be aeeomplished by amendment to the Welfare Code which should logieally be proposed by the Welfare Board. The association should stand ready to aid and assist in any way possible in promoting and developing this legislation, making its various appropriate eommittees available to the Welfare Board for eonsultation.

Aetual implementation should provide adequate eontrols for over-utilization in order to keep this program within the finaneial eapabilities of our state government and at the same time adequately eover the essential needs of the patients in this eeonomie group. This stand should be taken promptly, publieized widely by various news media, etc., and a continuous effort in this behalf should be maintained by the Board of Direetors and the various appropriate eommittees.

Sinee appointment of this subeommittee, it is noted that a somewhat similar eommittee on national health legislation has been appointed under the chairmanship of Dr. Leslie B. Smith. It was thought that perhaps the best interests of the assoeiation eould be served by delegating the functions of this subeommittee to sueh committee.

There was considerable discussion and differenees of opinion expressed as to wisdom of implementation of the Kerr-Mills law in this State at this time keeping in mind the position of the Welfare Board and Legislature.

It was moved by Dr. MeDaniel, seeonded by Dr. Steen and unanimously earried that the Legislative Committee reeommend to the Board of Direetors that The Arizona Medieal Assoeiation reaffirm its position as being in favor of implementing that portion of the Kerr-Mills law having to do with MAA (medieal assistance to the aged) to an extent compatible both with the satisfaetion of the need of the qualified reeipients of the program and availability of state funds for the purpose; and further, that it reeommend that the State Welfare Board be urged to initiate enabling legislation to this end.

Other Business

Capricious Nuisance Suits

Dr. Podolsky reported that Yuma County Medieal Society direeted him to present for consideration of this eommittee the advisability and possibility of initiating legislation which might have a tendeney to curb the filing of eaprieious nuisanee (malpractice) suits. The subjeet was diseussed. In the light of the right of the individual to file suit for whatever eause or purpose, there appeared little hope of ever enacting such legislation.

November Meeting

It was indicated that the next meeting of this eommittee would be held possibly in November.

Charles E. Henderson, M.D.
Secretary

PROFESSIONAL COMMITTEE
1961-62 Annual Report

Problems on aging have been eonsidered as reported by the Professional Committee to the Exeeutive Committee in the past year. Implementation of the Kerr-Mills Bill by the Arizona State Legislature was again urged.

During the interim, until sueh legislation is enacted, a resolution was passed reeommending that the Boards of Supervisors be sure adequate care is given insofar as is legally possible for the aged indigent in their respeetive eounties.

Civil defense problems in the state were considered by the Committee. The ehairman of the Subcommittee on Civil Defense attended several meetings, ineluding

the IntraState Arizona-California Disaster Medical Care Conference in January and the Western Medical Self-Help Training Work Shop Seminar in Alameda, California, November, 1961.

Specific recommendations in regard to civil defense were adopted by the committee and were forwarded to the Board of Directors.

The Subcommittee on Cancer developed a program for a Central Tumor Registry which has been adopted by the American Cancer Society. This Central Tumor Registry will be established soon as a result. The American College of Surgeons and American Cancer Society plan to have a joint seminar on tumor registries held in the State in the early summer of 1962.

In the maternal and child health field, the polio vaccine program carried out by the chairman of the Subcommittee in Maricopa County was lauded. This committee is considering the recommendations to be made to the Executive Board concerning the state association's views toward modifying cards for reporting of diseases to the State Board of Health.

It was recommended to the Board of Directors that The Arizona Medical Association be represented (by invitation) at the Arizona League of Nursing meeting to be held in Tucson in April.

Consideration of pending legislation concerning nursing homes and of standards of licensure of practical nurses was held and recommendations were made to the Board of Directors.

In the field of mental health, a recommendation of the Professional Committee that the proposed acts relating to professions and occupations providing for the establishment of a state examining board in psychology and requiring certification of psychologists, etc., be approved, was forwarded to the Board of Directors for its consideration.

The Eighth Annual Conference of Mental Health Representatives of State Medical Associations was held in Chicago, February 2-3, 1962. Two representatives from the Arizona Medical Association were in attendance. Dr. Lindsay E. Beaton gave the keynote speech at the conference and this committee commended him for a speech which was well received. The Professional Committee adopted resolutions aimed to encourage Blue Cross-Blue Shield participation in the treatment of mental diseases. Such resolutions were forwarded to the Executive Committee for its consideration.

A recommendation was forwarded that the state medical association favor establishment of an intermediate institution for boys near Tucson or Phoenix where suitable consultative services would be available.

The Professional Committee considered the subject of venereal diseases and found that a marked inadequacy of case reporting of these diseases was a prime reason for inadequate knowledge of the total cases occurring in the state.

The Professional Committee set up and held a panel discussion on air pollution. Men eminent in this field were guests of the committee. Among those attending were Louis R. Jurwitz, meteorologist, Phoenix; Orville K. McCullough and Alfred Carr, members of Maricopa County Committee on Water and Air Pollution.

Other guests for this panel discussion were Dr. Stanford Farnsworth; Dr. Bertram L. Snyder; and Dr. Lloyd M. Farner, Commissioner, Arizona State Department of Health. A transcript of this discussion was transmitted to the Board of Directors. It has been requested that the transcript or a summary of this report be published in ARIZONA MEDICINE.

It was recommended by the Professional Committee that the Arizona State Legislature be encouraged to consider these matters and give them its urgent attention.

Robert B. Leonard, M.D.
Chairman
Professional Committee

BENEVOLENT AND LOAN FUND COMMITTEE
1961-62 Annual Report

The meetings of the Benevolent and Loan Fund Committee were held July 9, 1961 and September 14, 1961.

The function of this committee is to review and recommend the disbursement of financial assistance to resident Arizona medical students limited to $1,500 per year per student, from its loan fund.

To qualify, such student must be initially an Arizona resident of good moral character; in good standing or accepted for registration and in attendance in a medical college or school that is approved for such training by the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association; provide personal life insurance payable to The Arizona Medical Association, Inc., in the amount of the maximum loans permitted, or $6,000; sign promissory notes to repay such loans at 6% rate of interest, this interest to begin only on completion of a one-year internship, the loan and interest to become due at a rate of $1,000 or more per annum one year following completion of internship.

On failure to comply with any of the foregoing provisions, the interest may be assessed at once and the loan and interest become due and payable in full. The disbursement of such funds is arranged by the Trust Department of the Valley National Bank of Phoenix, Arizona.

During the year 1961-62 the following loan applications to medical schools and colleges were processed and approved:

NAME — SCHOOL	AMOUNT
Ray D. Hughes, Jr. — University of Colorado	$1,500
Neil A. DeLeeuw — Baylor University	1,500
Richard S. Schooler — Creighton University	1,500
Paul B. Comer — Baylor University	1,500
Thomas M. Hudak — University of Michigan	1,500
David T. Eicher — University of Colorado	1,500
Jesse R. Rich — University of Utah	1,500
Charles A. Frazer — Tulane University	1,500

Lester S. Goldstein — University of Oregon	1,500
William H. Lawson — University of Colorado	1,000
Eugene H. Seymour — Baylor University	1,500
Leslie J. Belsher — Stanford University	1,000
	$17,000

The financial status of the Benevolent and Loan Fund Committee has been of some concern. Initial funds for disbursement to medical students in 1960 were $43,-105.39. Thirteen loans were previously expended which amounted to $17,400.

After the approval and disbursement of funds for the school year ending June 1962, a total of $9,231.11 will be available for future use. The benevolent portion of the fund is currently $5,464.40.

In view of the above, it is the recommendation of the committee to The Arizona Medical Association, Inc. that 50% of the current AMEF assessment of $10 per active member annually be retained for the loan fund for five years certain and that there be a re-evaluation of the program at that time.

The Benevolent and Loan Fund Committee, as directed by the Board of Directors of The Arizona Medical Association, Inc., has reviewed resolution No. 9 adopted as amended by the House of Delegates April 28, 1961, providing for the "Implementation of Voluntary Combined Student Loan, Disability and Retirement Plan for Physicians." It has submitted a resolution to the Board of Directors on the student loan fund portion.

The Benevolent and Loan Fund Committee further recommends that no action be taken by The Arizona Medical Association, Inc. at this time referable to establishment of a disability and retirement plan for physicians.

The committee wishes to acknowledge the generous contributions during the past year of $510. It is the hope of the committee that further contributions will be made by physicians and friends of the medical profession who are interested in giving financial assistance to medical students.

Donald K. Buffmire, M.D.
Chairman
Benevolent and Loan Fund Committee

INDUSTRIAL RELATIONS COMMITTEE
1961-62 Annual Report

Committee Membership:

Dr. John H. Ricker, chairman
Dr. John F. Currin
Dr. Juan E. Fonseca
Dr. Oscar W. Friske
Dr. Charles P. Neumann
Dr. Robert W. Weber

The committee met regularly, usually the first Monday of each month following their meeting as a Medical Advisory Board to the Industrial Commission. The problems discussed were similar to those discussed in the past. For the most part the problems were the matter of fee adjustment.

In some cases there was no actual fee for the service rendered and it was up to the committee to help the commission set a satisfactory fee. Many of the cases, however, involved a question of the doctor not understanding the fee schedule or charging more than the fee schedule.

In every case where there was a decision against the doctor, he was told that he could appear before the committee if he did not approve of the decision. In many instances a charge was not justified by the amount of information sent in. Many fee adjustments were made including additions to the medical-surgical fee schedule.

The question of whether it was ethical for a physician to own and operate a pharmacy and order what seemed to be a large amount of drugs from this pharmacy was brought up. This problem was turned over to the Professional Relations Committee of the Maricopa County Medical Society.

It was pointed out to the Industrial Commission that there were many cases seen by the Medical Advisory Board that apparently had been accepted without evidence of definite injury, also that there was too much treatment without authorization or proper consultation. The problem of unauthorized physical therapy was discussed and recommendations made.

There was a general discussion of the fee schedule with special reference to the fees for complete examination.

It was the policy this year for the chairman of the committee to go over the agenda for the next committee meeting with the claims department in order to expedite the meeting.

It was found that many of the members of the Advisory Board were not aware of the true significance or purpose of the Industrial Relations Committee.

Throughout the year this committee has found that the Industrial Commission has been more than cooperative with problems having to do with doctor and ICA relationship. The Commission has bent over backward to accept and carry out the recommendations of the Industrial Relations Committee.

We are most fortunate that we have such a fine group of people heading the Industrial Commission. It would be very easy for them to be arbitrary about fees and other decisions.

We have the following recommendations to make:

1. That some revision of the medical and surgical fee schedule be made with particular reference to eliminating individual consideration cases.
2. That a letter of full explanation as to the purpose of the Industrial Relations Committee and the duties of the members should be sent out to all new members when appointed.

John Ricker, M.D.
Chairman
Industrial Relations Committee



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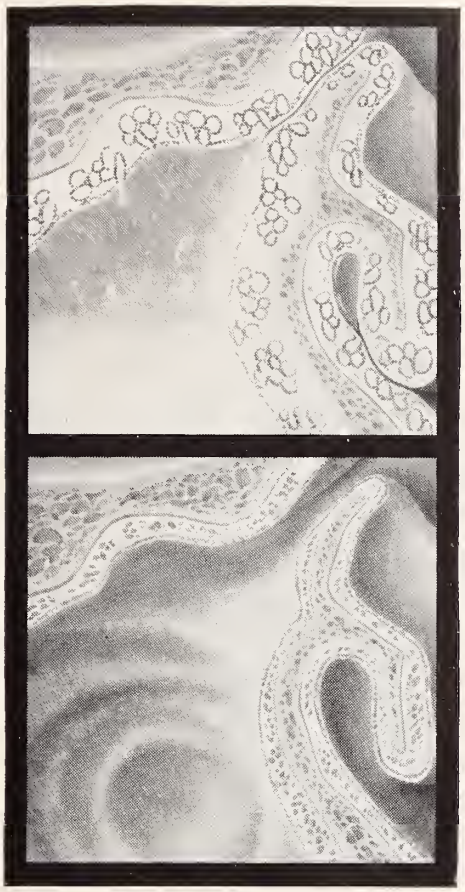
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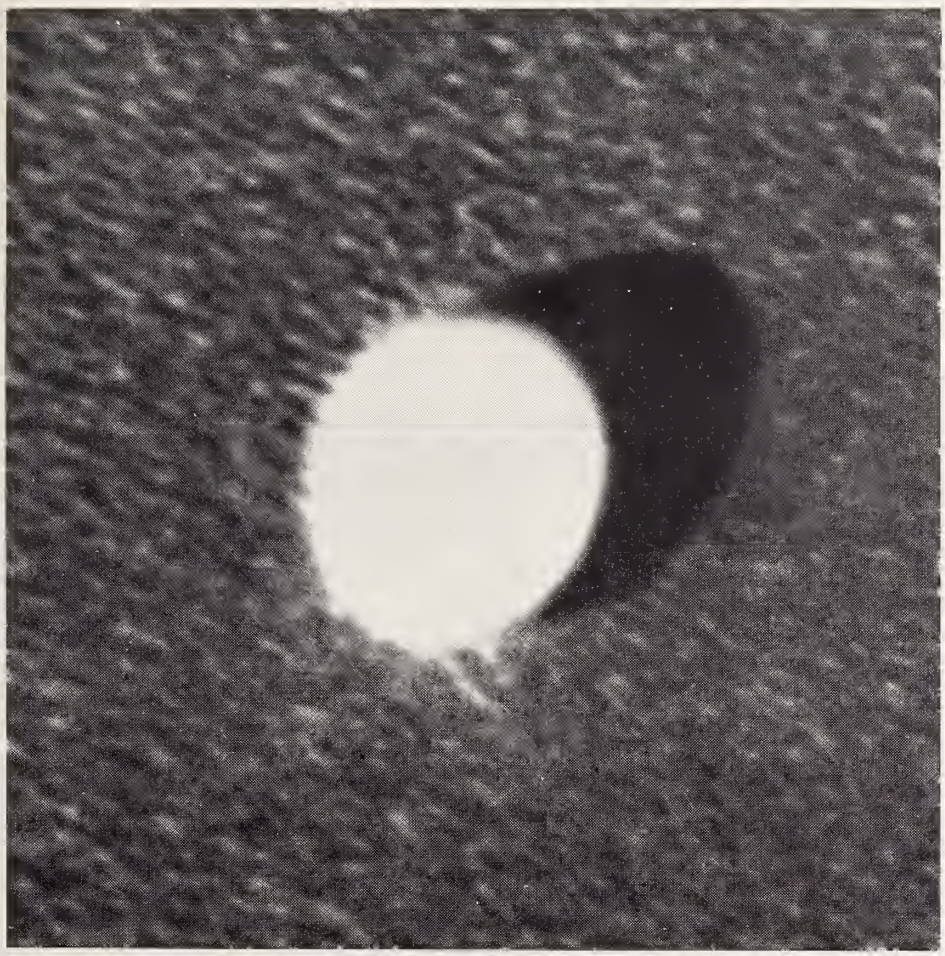
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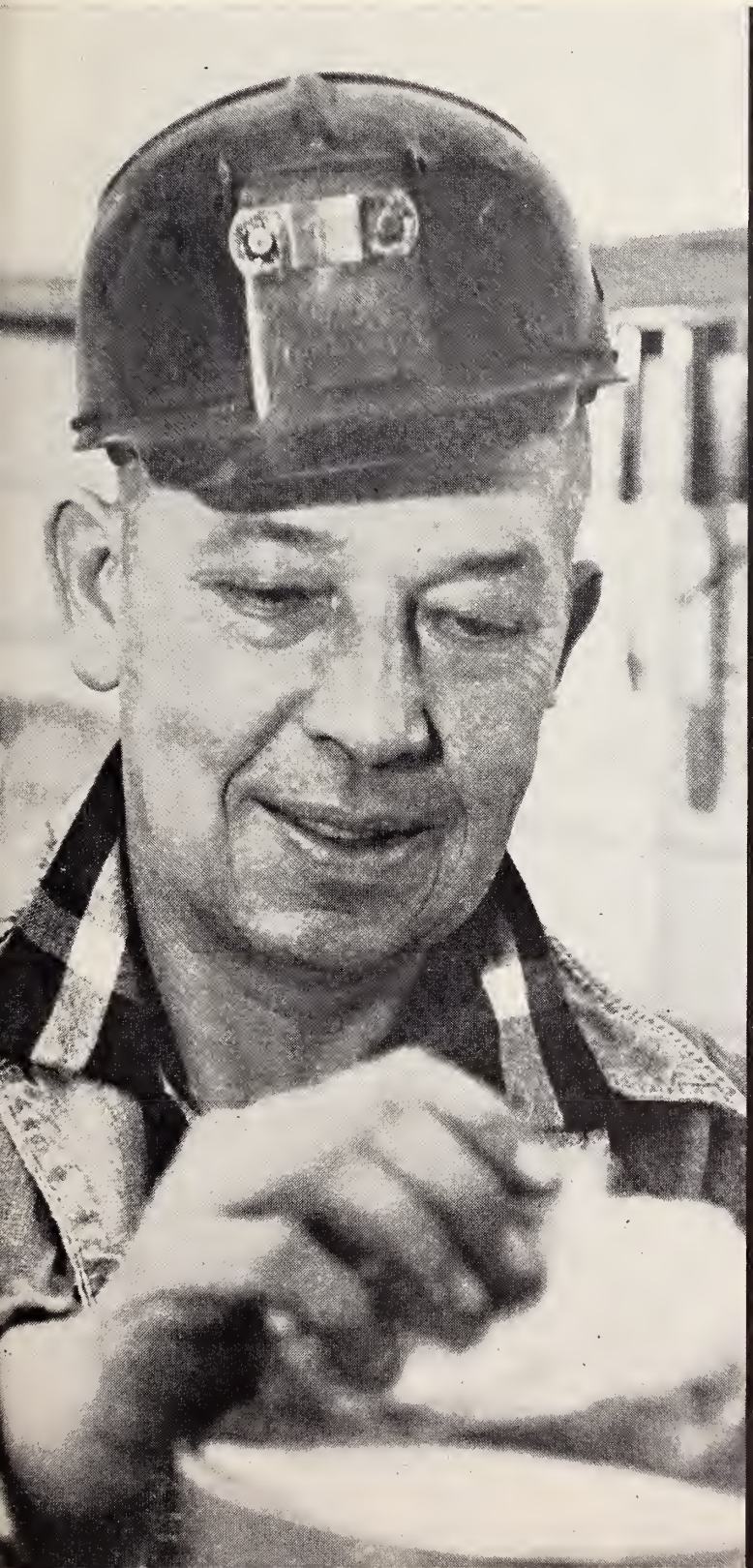
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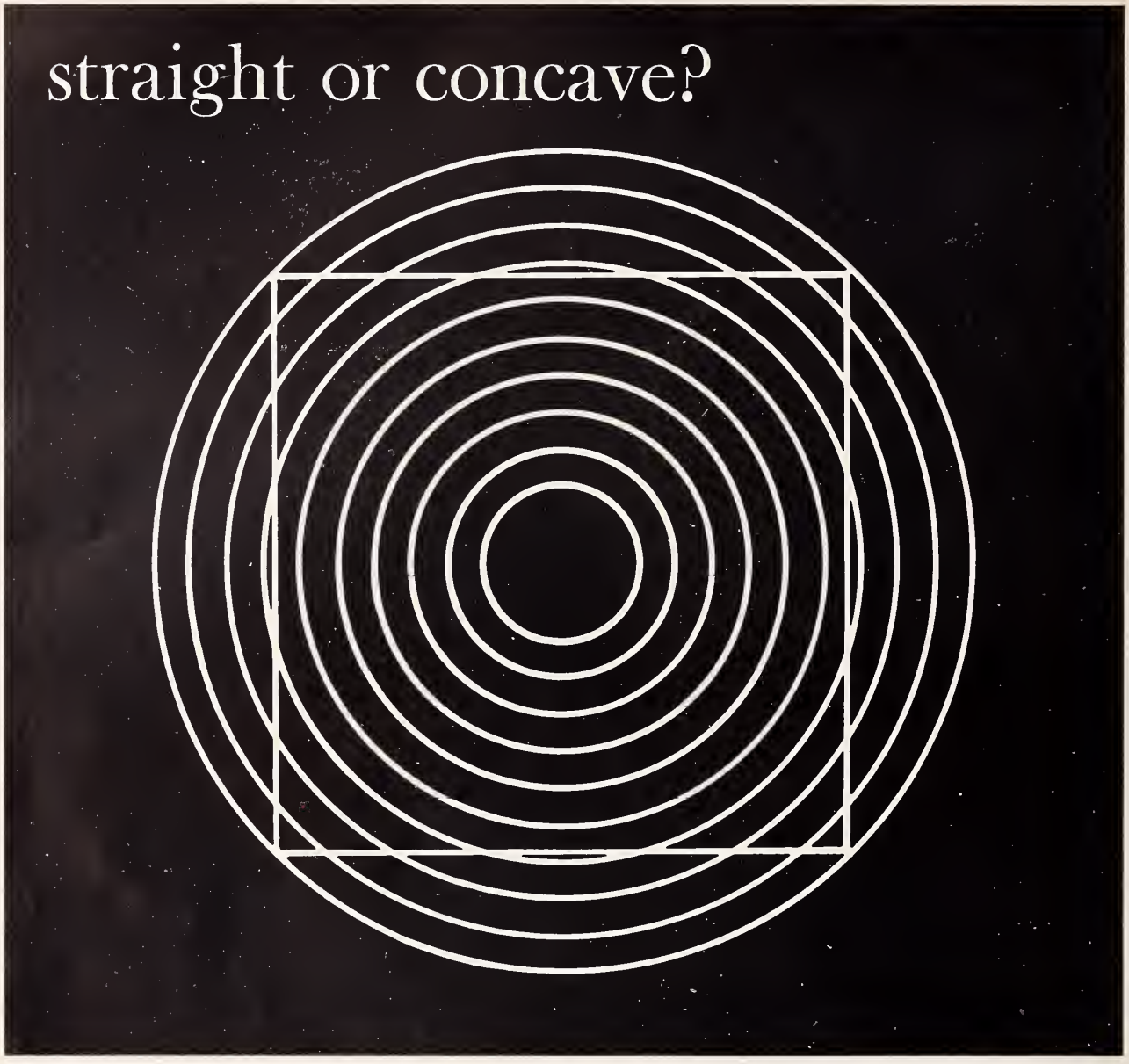


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1. Griffith, R. S.: Antibiotic Med. & Clin. Therapy, 7:129, 1960.

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The Diagnosis And Treatment Of Coccidioidomycosis

William A. Winn, M.D.

This excellent review of coccidioidomycosis deserves the attention of every Arizona physician. The use of Amphotericin B in the treatment of disseminated coccidioidomycosis and meningitis is described in detail. It represents an important contribution to the control of our most important indigenous disease.

COCCIDIOIDOMYCOSIS assumes increasing importance as an infectious disease because of the constant population flow into the endemic area, particularly the central valley of California (San Joaquin) and southern Arizona.

New arrivals into these endemic zones are for the most part nonimmune and therefore susceptible to primary infection by C. immitis. In the areas of highest endemicity, infections occur at a maximum rate of 25 per cent per year and ultimate infection of each resident would appear inevitable.(1)

In view of the above, Birsner's estimate of 35,000 cases of primary coccidioidomycosis yearly is probably low.(2) Vacationists attracted to these resort lands, who become ill with primary coccidioidomycosis after returning home (one to three weeks incubation period), also give to the disease increasing national importance.

The degree of current medical interest is indicated by over 575 papers that have appeared in the scientific literature in the past decade concerning various aspects of coccidioidomycosis. These form a part of Cheu's comprehensive collection which is maintained at the Veterans Administration Hospital in Fresno, California.

In view of all this, C. E. Smith puts it well when he states that, "We can only be thankful that it seems more charitably inclined to man than man is to it."(1)

Clinical Onset

The clinical onset of primary coccidioidomycosis is that of a respiratory-type illness, accompanied by fever and chest pain. There are usually mild chills, associated with generalized muscle soreness, headache, backache, and a dry or slightly productive cough. Weakness and anorexia are usually present and may progress until the patient is prostrate.

Arthralgia (desert rheumatism) is somewhat less common and may be accompanied by periarticular swelling, especially of the knees and ankles.

In one out of five female patients, but in only one out of twenty male patients, a skin rash develops (erythema nodosum or erythema multiforme).

The nodose lesions are the more common, usually appearing over the anterior surfaces of the legs and thighs, and being somewhat less frequent on the upper extremities.

They consist of painful, reddish-purple, nodular areas that vary in diameter from 1 to 10 cm. and persist for two or three weeks, leaving brownish-purple areas of temporary pigmentation. The multiforme type lesions, which are less common, are characteristically located on the upper extremities, and including the face,

Read at a meeting at the Tucson Medical Center, November 17, 1961.

Medical Director, Tulare-Kings Counties Hospital, Springville, California.

neck, scalp and thorax.

These skin rashes mark the period of skin hypersensitivity that follows two or three weeks after the initial infection. They are important because they serve to call attention to the existence of underlying coccidioidal disease which might otherwise remain unrecognized.

To confirm a diagnosis of suspected primary coccidioidomycosis, the coccidioidin skin test is helpful.

Skin sensitivity, manifested by induration, may not develop until the third or fourth week following the initial infection. Therefore, if a skin test is negative early in the illness, it should be repeated 10 to 14 days later.

Serological Studies

When the patient is found to be skin sensitive to coccidioidin, serological evaluation becomes important. C. E. Smith has made outstanding contributions in the development of serological testing in coccidioidal disease.(3, 4)

Usually, these tests will not only confirm the diagnosis, but also serve as reliable criteria for the severity and prognosis of the infection. Such serologic study, correctly performed and interpreted, makes it unnecessary to isolate C. immitis for diagnostic confirmation.

Smith states that such tests are successful in 92 per cent of patients with primary coccidioidomycosis who are clinically ill.(4)

In patients with residual pulmonary lesions the humoral antibodies are so minimal that in only 60 per cent does serology indicate the diagnosis. Therefore, negative serologic tests, and even a negative coccidioidin skin test, do not exclude the possibility of coccidioidal disease.

In disseminated disease serologic studies are always accurate, whereas, due to anergy, coccidioidin skin sensitivity may no longer be present.

Only on occasion is it necessary to establish the diagnosis by recovery of C. immitis. This requires an experienced bacteriologist who fully appreciates the hazards incidental to such cultural procedures, especially if nonimmune personnel are present.

Cultural growth on Sabouraud's medium can be obtained from draining sinuses, skin ulcerations, sputum, chest or spinal fluid and bronchoscopic or gastric wash material.

Histologic diagnosis is possible by biopsy of sinus tracts, infected lymph nodes, skin ulcers or surgical tissue.

Characteristic tubercle and foreign body giant cell formation does not differentiate between tuberculosis and coccidioidomycosis, and special tissue stains become necessary to demonstrate either Mycobacterium tuberculosis (Ziehl-Neelsen), or C. immitis (Hotchkiss-McManus or periodic acid-Schiff).

Coccidioidomycosis has many alleviating aspects. In two-thirds of initially infected people the illness produced is so mild that they may not seek medical attention and, following recovery, they are endowed with a lasting immunity. The remaining third are sick enough to require medical attention, and in many of these the chest roentgenogram reveals changes within the lungs. (Fig. One, I-A.)

The suppressive action of Amphotericin B should be considered when an extending pneumonitis or pulmonary infiltrate accompanies the initial infection, and especially when an elevating titer of complement fixation, at or above the 1:64 dilution, becomes apparent.

Such unusual activity of the primary infection, indicated by the findings on the chest film, the serologic changes, and illness of unusual severity, can be indicative of impending or threatening dissemination.

Consideration of Factors

Amphotericin B therapy should be considered for such patients and the decision for its use expedited by such factors as racial susceptibility (greater tendency for dissemination in the Filipino, Negro and Mexican), or an extensive pulmonary involvement including regional lymph node changes, severe prostrating illness, the existence of pregnancy, or perhaps the finding of C. immitis in a primary pleuritic effusion.

Any such implication that coccidioidal infection had become dangerous to the patient, or that there was possible failure of focalization of the initial infection within the lung, would be corrobrated by a rising titer of serum complement fixation.

Under such situations a minimum of one month of intravenous Amphotericin B is indicated. And because the action against C. immitis is fungistatic rather than fungicidal, it will often become necessary to extend the treatment period by another one or two months.

Having committed the patient to Amphotericin B therapy on the basis of such indications, it remains necessary to employ the same dosage and frequency of administration in the treat-

ment of severe primary infection that is threatening to disseminate, as in disseminating disease, in order to obtain serologic evidence of adequate response, indicated by a lowering of the titer of complement fixation.(5)

Such serologic evaluation provides the ultimate criterion for the true effectiveness of Amphotericin B in coccidioidal disease.

Another important group of patients are those with pulmonary roentgenographic changes of residual type, which appear in about 5 per cent of those who have recovered from the initial infection. (Fig. One, I-B.)

Direction of Medical Treatment

In acute primary coccidioidomycosis, medical treatment is directed toward successful focalization of the initial infection and the prevention of dissemination.

It appears impossible to avoid, by any presently available treatment, the development of chronic residual pulmonary changes that follow the initial infection.

Serial chest roentgenograms become important and should be made every three months for at least a year following recovery from primary coccidioidomycosis to facilitate discovery of such residual pulmonary lesions. Otherwise, they may be found only when a patient happens to have a routine chest film or is brought to the radiologist because of the onset of pulmonary bleeding.

Residual nodular changes (coccidioidoma) may also simulate malignant lesions and require exploratory thoracotomy, which could be avoided if such serial roentgenographic studies were obtained following primary coccidioidal infection. The medical or surgical management of the residual pulmonary coccidioidal lesions has been described in previous reports.(6, 7, 8, 9)

The correct therapeutic approach toward the group of residual pulmonary lesions will depend upon their correct recognition as being of coccidioidal origin and an understanding of their development and potentialities.

The choice between medical management and surgical extirpation should be based upon definite criteria and with proper conservatism.

It is generally agreed that existence of these lesions, per se, does not indicate a very high level of activity of the coccidioidal infection. Only infrequently has progressive disease resulted from pulmonary cavities or nodular densities.

(*Continued on following page*)

Figure One

COCCIDIOIDOMYCOSIS

A System of Classification

I. PRIMARY COCCIDIOIDOMYCOSIS

A. **The primary pulmonary lesion** (roentgenographic)
1. Pneumonitis (2-6 weeks duration)
2. Infiltration (Over 6 weeks duration)
3. Consolidation
4. Lymphadenitis, hilar
5. Cavitation, transient
6. Nodular densities, single or multiple
7. Pleural effusion
8. Mixed lesions, protean

B. **Residual pulmonary lesion** (roentgenographic)
1. Coccidioidoma (solid, round focus)
Nearby satellite densities often present.
2. Coccidioidal abscess (thick walled)
Nearby satellite densities often present.
3. Cavitation (cyst-like, thin walled)
4. End point lesion (calcification, fibrosis, localized bronchiectasis)

C. **Extending pulmonary lesion** (roentgenographic)
A local extension of any of the primary or residual lesions, but confined to the same body system without widespread dissemination.
1. Infiltrate, progressive
2. Coccidioidoma, enlarging
3. Coccidioidoma, excavating
4. Coccidioidoma, becoming multiple
5. Cavitation, enlarging
6. Cavitation, becoming multiple
7. Cavitation, transpleural rupture
8. Cavitation, recurrent

II. DISSEMINATING COCCIDIOIDOMYCOSIS (by systemic involvement)

Acute: Less than 6 months duration.

Chronic: More than 6 months duration.

A. Respiratory
1. Laryngopharyngeal
2. Tracheobronchial
3. Lung
4. Pleural
5. Thoracic wall

B. Lymphatic
C. Skeletal
D. Cutaneous
E. Peripheral granuloma
F. Visceral and peritoneal
G. Urogenital
H. Cardiac
I. Eye
J. Meningeal
1. Of hematogenous origin
2. By direct extension

III. PRIMARY EXTRAPULMONARY COCCIDIOIDOMYCOSIS

Infection by primary cutaneous inoculation, usually with secondary lymphadenopathy (chancriform syndrome).

(*Continued from preceding page*)

The surgical removal of pulmonary cavitation and coccidioidal abscesses should be considered if: 1) Repeated pulmonary hemorrhage occurs, 2) Cavitation or abscesses continue to enlarge, 3) A subpleural location of a cavity or abscess threatens transpleural rupture, 4) When a residual cavity sometimes becomes secondarily infected, and 5) when a solid nodular density (coccidioidoma) sometimes softens and excavates.

These chronic and residual lung changes show little response to Amphotericin B. There may remain, however, the need for coverage by this fungistatic agent when their surgical excision is indicated. This consists of the intravenous administration of Amphotericin B for a three-weeks period both preceding and following the surgical procedure.

Such preoperative preparation promises to not only lower the incidence of approximately 13 per cent serious postoperative complications, as reported by Melick(10), but can minimize the amount of lung tissue necessary to remove by permitting segmental or wedge resections, for example, in place of lobectomies.

It is important to differentiate chronic extending primary infection from disseminating disease. (Fig. One, IC).

Lesion Changes

Not infrequently, coccidioidal pulmonary lesions of residual type will undergo local changes, waxing and waning in their roentgenographic appearance. Such lesions do not ordinarily reactivate or spread locally as tuberculosis does, nor does this local activity ordinarily result in widespread dissemination. These roentgenographic signs of local activity must not be confused with dissemination. And serological evaluation becomes as important as the chest roentgenogram if one is to avoid confusion in this respect.

The use of Amphotericin B may be indicated in such instances of local activity. And occasionally it may become necessary to augment this with definitive surgical procedures.(11)

Disseminating coccidioidomycosis, when untreated, has been associated with a 50 per cent mortality.

This serious complication is fairly uncommon among the general group of patients infected each year (about 1 per 1,000). But it occurs twenty to thirty times as often in the Negro and Filipino as in the Caucasian.

The involvement in disseminating disease is usually multi-systemic, (Fig. One, II) with the exception of meningeal infection which often occurs as the only manifestation of extension from the primary focus. Detailed description of the changes produced by dissemination have been covered in the literature. (12, 13)

Again it should be emphasized that a rising titer of serum complement fixation is of primary importance in heralding dissemination, and elevation above the 1:64 serum dilution requires immediate consideration for the intensive use of Amphotericin B.

Need Cited

In dealing with coccidioidal disease physicians have felt the need for an effective antifungal agent that could be used for: 1) The control of severe primary coccidioidomycosis, 2) The arrest of dissemination, including coccidiodal meningitis, 3) The healing of peripheral granulomas and abscesses, 4) Surgical coverage to prevent the occasional severe complications (13 per cent) that follow surgical manipulation,(10) and 5) Protection of the pregnant patient who has contracted primary coccidioidal disease.

Many compounds and antibiotics have been recommended, but adequate proof of their effectiveness has been lacking and they have been ultimately discarded.

The isolation and availability of Amphotericin B, reported by Gold in 1956(14) and Vandeputte et al.(15) and its effectiveness against C. immitis in animals, as described by Sternberg,(16) Steinberg,(17) and Halde,(18) soon led to its clinical use as reported by Littman,(19, 20) Seabury,(21) Colwell,(22) Newcomer, (23, 24) Utz,(25, 26) Klapper,(27) Winn,(5) Smith,(28) and Einstein(29).

These reported observations prove the effectiveness of Amphotericin B against not only coccidioidal disease, but other systemic fungus-produced diseases.

Its use is not indicated in the treatment of primary coccidioidomycosis when, as is usual, the disease is uncomplicated and self-limiting. However, when the severity of the primary infection and a rising titer of complement fixation suggests an impending or threatened dissemination, the antibiotic should be given intravenously in adequate amounts.

Its fungistatic effect has been of value in pro-

moting the healing of peripheral granulomas and abscesses, including ulceration and lmphadenitis with associated sinus tracts.

As a "covering" drug it deserves consideration prior to any type of surgical intervention or removal of lesions harboring viable C. immitis.

The reported tendency for active primary coccidioidal disease to disseminate during pregnancy(30) makes Amphotericin B a desirable prophylactic in this respect.

The necessity for repeated intravenous administration of Amphotericin B, at intervals of 24 to 48 hours, requires expert manipulation of needles and careful use of veins in order to preserve these important portals of therapy. Considerable rapport with the patient becomes necessary so that the usual side reactions and long period of confinement in the hospital are acceptable.(5)

The usual intravenous dose is 1 mg. of Amphotericin B per kilogram of body weight. During the initial phases of therapy the antibiotic is given daily, beginning with 10 mgs. well diluted in 500 cc. of 5 per cent dextrose in water, and gradually increasing the dosage to that indicated, and which will require 700-800 cc. of diluent.

After two or three weeks of such administration the dosage may be decreased by extending the interval to every 48 hours and maintaining a serum concentration of 0.5 to 1 mcg/ml.

BUN Elevation

Treatment can be temporarily interrupted or decreased if the BUN elevates excessively (over 50 mg. per cent), although we have not been too much concerned with moderate BUN elevation.

The necessity for controlling a potentially fatal infection requires, in this respect, a considerable degree of medical forbearance on the part of the physician. Most observers agree that following the initial discomfort of Amphotericin B administration, that the accompanying side reactions, including chills, fever and nausea, lessen in degree and that there is soon a definite sense of improvement felt by the patient.

Progress in the manufacture of the proprietary preparation (Fungizone), and particularly in purification, has been accompanied by a noticeable reduction in the severity of the side reactions and also of the measurable toxic effects, including in particular, BUN elevation and secondary anemia.

Occasional lowering of the hemoglobin and red cell values indicates either bone marrow depression or a hemolytic effect that responds to transfusion of whole blood. Gastrointestinal discomfort, particularly nausea and vomiting, may respond to preliminary administration of Cyclizine Hydrochloride (Marezine) 50 mg. or dimaleate prochlorperazine (Compazine) 10 mg. intramuscularly.

Febrile Reactions

Chills and febrile reactions are frequent, but vary in severity and can be minimized by maintenance of body temperature (electric blankets, hot water bottles) and by slow (3 to 4 hours) administration of the intravenous preparation. The periodic fifteen minute "cut-off" technic has been found useful in this respect.

Salicylates are helpful in the control of these febrile reactions if given thirty minutes before the start of administration and repeated in two hours.

Diphenhydramine hydrochloride (Benadryl) 25 to 50 mgs. may be given along with the salicylate. One must use careful aseptic technic in the preparation of intravenous Amphotericin B solution because of the known ineffectiveness of the antibiotic against bacteria.

It is also not understood why some patients under intensive Amphotericin B therapy will develop low serum potassium values. Decreased serum potassium levels have also been reported by Hauser(31) and Shields.(32)

This seems to be definitely related to the administration of the antibiotic. It poses the problem as to whether or not the lower nephron type of tubular ehange (swollen, vacuolated epithelium in the convoluted tubules) that has been found in the kidneys of some patients receiving Amphotericin B, is due to a drug toxic effect of the antibiotic itself, or to the effect of hypokaliemia upon the tubule.

In a series of observations on 15 patients, E. Rhoades and associates of the medical service of the Veterans Administration Hospital in Oklahoma City, Oklahoma, conclude, upon the basis of plasma clearances of inulin and PAH (sodium para-amino-hippurate), that Amphotericin B alters the renal function due to diffuse changes in the kidney which affect not only glomerular filtration but also renal plasma flow.

They were unable to demonstrate any perman-

ent renal damage that could be ascribed to Amphotericin B, although renal recovery may not be as prompt and complete as previously believed.

Coccidioidal Meningitis

Coccidioidal meningitis, which is ordinarily fatal within a year after onset if untreated, is definitely responsive to combined intrathecal and intravenous administration of Amphotericin B. (5,29,33)

It is particularly important to recognize the development of coccidioiidal meningitis early. And the possibility must be kept in mind when the illness of primary infection persists.

The physician should not hesitate to do a lumbar puncture and examination of the spinal fluid if there is headache, prolonged fever or other suggestive symptoms.

Routine examination of the spinal fluid should be considered at the end of the first, second and fourth months after onset of primary coccidioidomycosis in a child or adult who has protracted illness.

Intrathecal administration of Amphotericin B can be carried out via the lumbar canal or the cisterna magna. The latter is preferred because it is closer to the base of the brain or chief site of the meningeal infection and avoids a subacute arachnoiditis that occasionally complicates injections in the lumbar area.

When intensive treatment of coccidioidal meningitis is necessary, a hospital regimen of intravenous and intrathecal Amphotericin B would consist of lumbar injections of not over 0.5 mg., and cisternal injections of the same dosage on alternate days.

Concurrent intravenous administration would be given at 24 or 48 hour intervals in order to maintain a serum level within the therapeutic range of 0.5 to 1.0 mcg./ml.

Importance of Early Treatment

The early treatment of coccidioidal meningitis is most important, as in the successful management of tuberculous meningitis. The insidious onset of coccidioidal meningitis and the slow development of recognizable symptoms and signs require the physician to remain ever alert to the possibility.

Persistent headache or neckache, accompanied by increasing lassitude and drowsiness and low grade fever, may herald meningeal involvement. The spinal fluid is usually under increased pressure and pleocytosis is present, varying from a few hundred cells, mostly polymorphonuclear leucocytes, to several thousand per cu. mm.

Later in the course of the disease lymphocytic cells come to predominate. The spinal fluid protein content is increased and the quantitative sugar reduced.

A first zone colloidal gold curve may be present. Cultures may be positive for C. immitis.

C. E. Smith states that three-fourths of patients with meningeal infection will show complement fixation in the spinal fluid and that this is confirmatory of the diagnosis.(4)

One-fourth of patients will not show fixation of the complement in the spinal fluid despite the presence of coccidioidal meningitis.

Continued Therapy

After discharge from the hospital, an outpatient regimen of suppressive Amphotericin B cisternal therapy is continued. This is compatible with ordinary occupational or school routines.

Weekly injections are given of 0.5 mg. into the cisterna magna. Freshly made dilutions using sterile distilled water and a concentration of 0.25 mg. of Amphotericin B per cc. are used in all intrathecal administrations. A starting dose of 0.1 cc. of the above dilution is used and gradually increased until 2 cc. can be given without excessive discomfort.

In the lumbar area the sites of injection are altered, using levels above, even with, and below the iliac crest. We believe it is important to continue planned interval therapy as has also been suggested by Einstein.(29)

The patient with arrested meningeal infection should return for a month of intravenous Amphotericin B every three month for the first year following discharge.

This is necessary because of the fungistatic type of action of Amphotericin B against C. immitis and the notorious tendency for coccidioidal meningitis to relapse.

The need still remains for an effective fungicide that might be simply administered to the patient with primary infection and which would shorten the period of disability and prevent the development of residual pulmonary lesions or disseminating disease.

The advent of Amphotericin B, although not a "breakthrough" in the control of serious coccidioidal infection, has marked a definite contribu-

tion to the arrest and suppression of coccidioidomycosis in its dangerous phases.

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A Case Presentation Of Pneumatosis Intestinalis

George H. M. Thornton, M.D.
Samuel L. Cohen, M.D.
V. S. Counseller, M.D.
P. T. Phalen, M.D.

An interesting and illustrative report of a somewhat rare disorder, Pneumatosis Intestinalis, which, as is so frequently the case, was originally considered to represent polyposis; the diagnosis and surgical treatment are described, and a brief review of the literature is given.

PNEUMATOSIS intestinalis was first observed at autopsy by De Vernoia in the year 1730. Hahn first observed it on a living human. And Finney in 1908 reported the first case in literature. In 1952, a total of 255 cases had been reported.

The disease is better known to veterinarians and occurs most often in pigs. In humans it occurs in the stomach, small and large bowel, and mesentery.

In infants, the cysts are largely mucosal and submucosal. In adults they appear most often subserously. In children, pneumatosis often concurs with poor health and in infants with intractable diarrhea.

In adults, the disease is usually asymptomatic. The cysts may perforate and give rise to a pneumoperitoneum, which at times is often found incidentally, at autopsy, at surgery, on barium enema, or at proctoscopy.

Analysis of Air Cyst

Chemical analysis shows the air cyst to be composed of approximately 90% nitrogen, 7.6% carbon dioxide, and 2.4% oxygen.

On proctoscopy the cysts look like broad based polyps. They are compressible. They are quite easily mistaken for polyps or malignant tumors.

Peptic ulcer, gastric carcinoma, gastroenteritis, and bowel obstruction often accompany this entity.

Koss in 1952 showed that 55% of cases of pneumatosis are associated with stenotic gastric and duodenal ulcers.

Theories of etiology of this disease are varied. Neoplastic origin, bacterial origin, and chemical origin have been given as the cause. But the real cause is not definitely known.

Radiographic Appearance

The radiographic appearance of a pneumatosis intestinalis can mimic (a) a perforated viscus, (b) polyposis or (c) neoplasm in the colon.

The diagnosis should be suspected radiographically when bizarre, fixed, mid-abdomen gas collections are seen. Air collections and cysts, that appear to be in and outside of the bowel lumen should make one suspect the possibility of pneumatosis.

Varying degrees of obstruction can occur. A severe gastritis or emphysematous gastritis is very difficult to differentiate from pneumatosis involving the stomach.

Clinically pneumatosis can occur in an acute form with findings and symptoms closely related to an acute gastritis with nausea, vomiting, hematemesis, fever, leucocytosis, and a rapidly fatal outcome.

Very often, however, the case is chronic and appears benign. However, a gradual downhill course does occur for these patients unless defin-

Phoenix, Arizona.

ite therapy, i.e., surgery is given to these patients, particularly those having the pneumatosis intestinalis involving the colon.

CASE PRESENTATION

Case 1. A.D., white male, age 40, first seen on May 20, with a complaint of diarrhea of 2 months duration.

History of Present Illness: Patient had no previous history of abnormality of the bowels. But two months before he was seen, he began to have frequent loose bowel movements without any evidence of blood or mucus in the stools. This was not associated with any abdominal pain and continued until two weeks before he was seen.

Two weeks before examination he states his bowels became very hard to move and he began to take laxatives. During this time, however, he had a curious foamy discharge from the rectum 6 or 8 times during the 24 hours, occurring as frequently at night as during the day.

This discharge contained no blood. At this time, he lost his appetite and had lost five pounds of weight when he was seen.

History of Previous Illness: The patient had been treated for hypertension for 9 years, which at one time was associated with a diastolic pressure of 160 millimeters of mercury. This responded well to treatment.

Apart from multiple skin cancers on the face, he had no previous history of significance.

Physical Examination: He had slight cardiac enlargement and a prominent systolic murmur, but no thrill, and no evidence of failure.

His abdomen showed no tenderness or masses; his liver was palpable two finger breadths below the right coastal margin and was not tender. There was no other abnormality on physical examination. (Fig. 1, 2).

Sigmoidoscopy: Revealed a large polypoid lesion at 16 centimeters, consisting of multiple irregular sessile polyps that appeared to be hard and indurated. There was no ulceration. It seemed to be possible to pass the instrument beyond this point. But the polypoid lesions appeared to continue into the lower sigmoid colon. Biopsies were taken from three representative lesions, all of which appeared to be extremely



Note sigmoid elongated with marked musocal distortion. Air cysts appear to extend beyond the wall of the sigmoid.



hard and difficult to cut. The rectum below the lesion, i.e., for the lower 15 or 16 centimeters, had a normal appearance .

A stool specimen was obtained at this time, which was negative for occult blood. His hemoglobin was 12.2 grams, white count 10,500, with a differential of segs 71%, lymphs 24%, monocytes 1%, stabs 3%, eosinophils 1%. His urine showed no abnormality.

Clinical Diagnosis: A clinical diagnosis was made of multiple polyposis of the rectum and sigmoid colon with the probability of malignancy.

Radiographic Report: Radiographic studies included barium enema with air contrast. It was noted under fluoroscopy that there was marked mucosal distortion of the sigmoid, which was somewhat elongated.

At first, poor preparation was suspected. But patient was allowed to evacuate and re-examination done. Again the marked polypoid nature of the mucosa was evident on the fluoroscopic examination and on the films.

An air contrast study was done, and the differential diagnosis made of multiple polypoid lesions of the sigmoid, and pneumatosis intestinalis was mentioned the last because of the air cysts, which appeared to extend beyond the wall of the sigmoid colon. Subsequently, it was also noted that these air cysts extended beyond the walls of the transverse and ascending colon.

Operative Report: A preliminary rectosigmoidoscopy was done and the polyps started at about 15 centimeters in the upper portion of the rectum. A left rectus incision was made extending from the left side of the symphysis to well above the umbilicus.

Investigation of the colon revealed numerous large polyps and a complete involvement with pneumatoids of the colon. These extended from the upper rectum all the way around to the cecum so that it was necessary to do a complete colectomy, saving 16 centimeters of rectum and rectosigmoid.

The terminal ileum was then brought down as an ileorectostomy. Anastomosis was made with an outer row of interrupted black silk, using eight interrupted sutures posteriorly.

The mucosa was brought together with 2-0 chromic catgut anterior and posterior, and anterior wall reinforced with a second row of catgut and an interrupted row of black silk.

The peritoneum of the bladder was then brought up, attached to the terminal ileum, taking the tension off the anastomosis. One Penrose drain was placed down in the gutter back of the anastomosis and brought out through a stab wound. Ten grams of sulfathiazole was placed over the anastomosis within the lower abdomen.

The liver, gallbladder, stomach and duodenum were negative. The wound was closed in the usual manner. The patient stood the operation very well and made a good recovery.

Report of Pathological Examination: Pathological examination revealed the gross and microscopic findings typical of multiple air cysts throughout the colon. And the final diagnosis was that of pneumatosis intestinalis. A previous pathological report on a biopsy of the suspected polyp done elsewhere reported a benign polyp of the colon.

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On Medical Words

Caduceus — The two serpents entwined on a winged rod was the staff or wand of the god, Mercury, and symbolized his tranquil yet potent healing power.

Robert D. Smith, M.D.

A New Antitussive, Levopropoxyphene

Clifford E. Ernst, M.D.
Millard Jeffrey, M.D., FACCP

The authors in their discussion stress the difficulty in assessing the efficacy of cough remedies. However, the improvement in cough in their series by the use of Novrad® is unusually striking. Physicians treating respiratory illnesses should find the report of great interest.

THE PURPOSE of this paper is to report our clinical experiences on 126 patients given a new antitussive compound, levopropoxyphene.

Since drugs for the relief of cough act either as inhibitors of the cough reflex or promoters of bronchial secretions, it is of interest to find a compound which clinically appears to have considerable activity in both respects.

The most commonly used expectorants are terpin hydrate, creosote derivatives, ammonium chloride and iodides.

The most commonly used antitussive drugs are the opiates, dihydrocodeinone bitartrate and methodone hydrochloride, which control cough by their depressant action on the respiratory center in the medulla.

The use of this latter group as cough suppressives is limited by their liability to cause drug tolerance and depressed respiration. The opiates may also cause constipation.

Levopropoxyphene is an effective antitussive drug which in our experience will not cause tolerance or respiratory depression in maximum therapeutic dosage and has not exhibited toxic or undesirable pharmacological actions.

Pharmacology

In 1953, Pohland and Sullivan (1) prepared a series of drugs, one of which was *alpha-dl*-4-dimethylamino-1, 2-diphenyl-3-methyl-2-propionoxybutane hydrochloride.

This preparation was found by Robbins(2) to have a potent analgesic effect. Since it contained a racemic mixture of *alpha-d* and *alpha-l* isomers, it was only after the dextrorotatory and levorotatory stereoisomers were prepared separately that the *alpha-d* isomer was found to be the source of the analgesic activity of the original mixture.

This compound, dextropropoxyphene, is now widely utilized as an analgesic in the same approximate effective dosage as codeine, but without its undesirable addictive qualities or other pharmacodynamic activities of morphine derivatives.

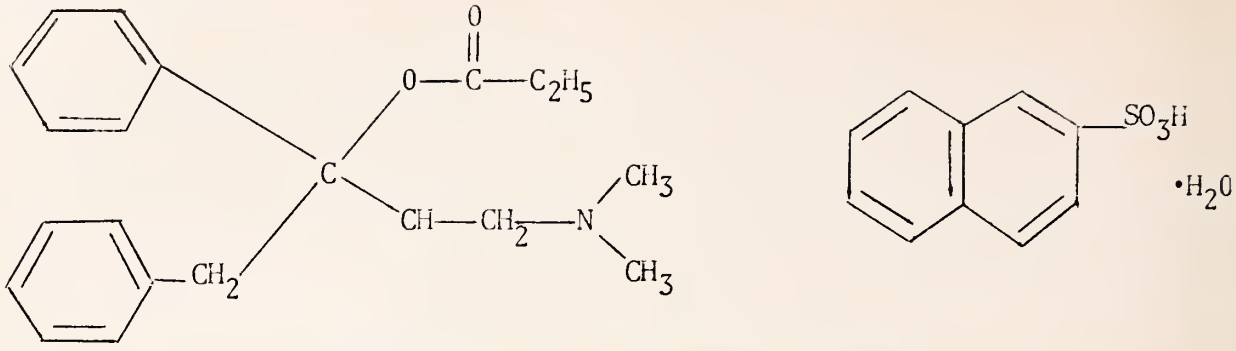
The levo isomer of propoxyphene was found to have an analgesic effectiveness equal to codeine.

This cough suppressant activity was found for the oxide, the hydrochloride, and the napsylate salt of levopropoxyphene utilizing the method of sulfur dioxide induced cough in guinea pigs.(3)

Further animal studies showed an LD50 in mice of 93 ± 75 mgs. per kg., and in rats 1,960 ± 612 mgs. per kg. and long term feeding caused no significant alteration in growth and no visceral or hematological changes.(2)

The structural formula of levopropoxyphene napsylate is shown on the following page.

Phoenix, Arizona.
From the Good Samaritan Hospital Unit for Clinical Research in Metabolic and Rheumatic Diseases.
Supported by a grant from Eli Lilly & Company, Indianapolis, Indiana.
NOVRAD,® levopropoxyphene as the napsylate, Lilly.



Structural formula 1-propoxyphene as the napsylate.

Methods and Materials

Clinical observations of the antitussive effectiveness of levopropoxyphene as the napsylate were made during the year 1961 on 126 patients in the private practice of internal medicine. All patients were adults. Although most of them were studied as outpatients, two were hospitalized and later followed as outpatients.

In a preliminary study we had used levopropoxyphene oxide. For the past year we have been using the napsylate salt of propoxyphene because this compound is not bitter and is suitable for use in fluid suspension as well as in capsules.

Clinically we have been unable to demonstrate any difference in effectiveness between the napsylate and the oxide forms of levopropoxyphene.

The diagnoses varied widely but can be broadly classified as acute or chronic respiratory problems. Some patients have been on levopropoxyphene either as the oxide or npasylate for over a year.

The diagnostic categories are listed in Table No. 1. The 126 patients studied had non-tuberculous pulmonary disease classified further as bronchial asthma, bronchiectasis and emphysema or combinations of these conditions.

Twenty-nine patients had a chronic cough with apparent tracheo-bronchitis either from recurrent infections or caused by such exogenous irritants as cigarette smoke.

Included for study were one case of substernal thyroid with severe cough due to tracheal compression later relieved surgically, four patients with cough caused by pulmonary congestion due to cardiac insufficiency, and one patient with cough due to pulmonary infiltrates as a result of lupus erythematosus.

Two patients had bronchial neoplasm. Forty-seven patients had acute cough caused by various degrees of tracheobronchitis.

Included in the category of acute cough were three cases of coccidioidomycosis and one of lobar pneumonia. These cases are summarized in Table No. 1.

The dosage of the levopropoxyphene varied from 100 mgs. to 600 mgs. daily in divided doses given orally in capsules or suspension.

Fifteen of the patients were treated at some time by intramuscular injection of propoxyphene hydrochloride. Most of the injections were for acute paroxysmal cough and consisted of one single dose of 100 mgs. followed later by oral propoxyphene. These are listed separately both as to diagnosis and result in Table No. 2.

Evaluation was made as to the ability of the drug to materially slow the symptom of cough or to promote ease of expectoration and liquefaction of expelled mucous. The results were assessed by assigning ratings following the system suggested by Phillips and Guillaume(4) which is chiefly subjective as follows:

Excellent – (a) In acute cases when the cough rapidly diminished and was virtually non-existent within three days. (b) In the chronic cases, when the cough was markedly diminished and sputum more easily produced.

Good – When the patients definitely benefited by the drug and obviously improved within three to four days of starting treatment.

Fair – When the patients showed a certain degree of relief of cough, but symptoms continued beyond the three - to - four - day period.

Poor – When there was no apparent effect.

Results

The results are summarized in Tables No. 1 and No. 2. Ten patients with bronchiectasis who had previously been on potassium iodide but were no longer able to take the drug because of rash, hypersalivation, specific allergy or GI disturbances used levopropoxyphene as the napsylate or the oxide in capsule form with

TABLE NO. 1
CASE ANALYSIS OF LEVOPROPOXYPHENE AS THE NAPSYLATE
(Given Orally)

DIAGNOSIS	No. of Cases	Results				REMARKS
		Excellent	Good	Fair	None	
Tracheobronchitis	47	35	7	3	2	Length of dosage usually 4 to 7 days.
Bronchiectasis	30	18	10	1	1	Fifteen of these patients took the medication 12 to 16 months.
Chronic or recurrent bronchitis	29	16	12	1		Five of these patients took the medication from 12 to 16 months.
Bronchial asthma	7	6	1			
Cardiac insufficiency	4	1	2	1		Heart failure due to A.S.H.D. of H.C.V.D.
Acute pulmonary coccidioidomycosis	3	3				
Lobar pneumonia	2	2				
Bronchial neoplasm	2	1		1		
Lupus erythematosis	1		1			Used 4 days until cortisone became effective.
Substernal thyroid	1	1				Pre-surgical relief both oral and parenteral
TOTALS	126	83	33	7	3	

excellent results.

We have, therefore, virtually discontinued the initiation of the use of potassium iodide in new patients when an expectorant is indicated and have substituted this new drug.

We have the impression that in many bronchiectatic patients the suppression of cough was alleviated by levopropoxyphene due to liquefication of material in the bronchial airways.

The patients with cough due to acute cardiac failure were benefited by marked cough suppression while the usual methods for control of cardiac insufficiency were taking effect.

The case of tracheal compression due to substernal thyroid we believe to have been alleviated solely by central action via the cough reflex. The patient with cough due to lupus erythematosus was able to control her cough with the help of the drug until steroids took effect in several days.

Of particular interest to us in Arizona was the effectiveness of levopropoxyphene in suppressing the hacking cough of three patients with pulmonary infiltrates due to Coccidioides immitis until the acute process abated.

The intramuscular use of propoxyphene as the hydrochloride was largely limited to a single intramuscular injection administered to individuals who arrived at the office racked with intractable cough. (*Continued, next page*)

TABLE NO. 2
CASE ANALYSIS OF LEVOPROPOXYPHENE HYDROCHLORIDE
(Parenteral)

DIAGNOSIS	No. of Cases	Results				REMARKS
		Excellent	Good	Fair	None	
Tracheobronchitis	8	7	1			One patient reported nausea.
Bronchiectasis	3	2	1			
Chronic Bronchitis	1	1				
Cardiac insufficiency	2	2				
Bronchial neoplasm	1	1				
TOTALS	15	13	2			

(*Continued from preceding page*)

Without exception these patients were comfortable and the cough greatly diminished within fifteen minutes. This effect probably can be attributed to central action of the drug.

One patient with bronchial neoplasm was able to sleep at night with a single bedtime injection of 100 mgs. The drug was used effectively for six weeks prior to his death. He did not require narcotics.

Another patient with bronchiectasis accompanied by intractable cough received 100 mgs. of propoxyphene hydrochloride every four to six hours intramuscularly for three days with remarkable relief of symptoms and with no apparent suppression of the expectoration of secretions.

Side Effects

In no patients were any skin rashes noted. No attempt was made to do routine follow-up blood counts, but when this was done for other indications no signs of drug induced toxicity were found. This is in agreement with the findings of Gruber *et al.*(5)

No one complained of nausea. There were no clinical signs of toxicity. Four patients had a marked sense of urinary urgency and frequency after taking 100 mgs. of levopropoxyphene for two days. Urinary findings were negative and after omission of the drug for two days it was resumed without difficulty.

One elderly patient with treated hypothroyidism and arteriosclerosis developed marked tremor of the hands on 400 mgs. daily. The symptoms subsided after the drug was discontinued, although the cough suppressant effect was excellent. Later the drug was restarted in the same dosage and no further tremor has been reported.

Long-Term Therapy

Twenty patients have been on levopropoxyphene either as the oxide or the napsylate from twelve to sixteen months continuously. Their ages range from 14 to 70 years and they suffer from bronchiectasis with emphysema and chronic bronchitis.

We have seen no addiction and, even more important, no tolerance. In fact, if the patients have been persistent in taking their medication they have voluntarily been able to reduce the daily amount to 100 mgs. or at the most 200 mgs. in either one dose or divided doses.

All of these patients report that their sputum remains thin and non-purulent, reduced in total quantity and is expectorated with not much more effort than clearing of the throat.

It has been most gratifying to note that the use of levopropoxyphene has been sufficiently successful in the patients with bronchiectasis so that during the past year there has been little need for the use of antibiotics or bronchodilating medications.

Six of the seven patients with bronchial asthma have been able to reduce to a minimum or entirely eliminate steroids and ephedrin-containing compounds.

Particularly close observation was made of our youngest patient in this study who is the son of one of the authors. This 14-year-old boy who has had bronchial asthma since early childhood has taken levopropoxyphene in doses of 100 to 400 mgs. daily for over a year.

During this period of time he has been able to eliminate almost entirely the need for bronchodilating drugs. He has been very reluctant to discontinue levopropoxyphene which he now takes in a dose of 100 mgs. twice daily.

He recently stopped the medication for one week but states that he began to wheeze about the fifth day and was most happy to resume his usual dose of levopropoxyphene which relieved him once more of his annoying asthma.

The patients on successful long term propoxyphene therapy report to us that the mucous expectorated from the lungs seems thinner. Our observations up to this time indicate that the expectorant action of levopropoxyphene is not due to drying of the bronchial excretions but that there appears to be some action causing thinning of the bronchial excretions due to the drug.

Attempts are being made by us at the present time to accurately measure the viscosity of the bronchial excretions in order to determine the specific expectorant activity, if any, of levopropoxyphene.

Discussion

Very few remedies have been used so empirically as those reputed to be beneficial in the treatment of cough. Traditionally cough preparations have been liquid with a syrup base because of the immediate but brief demulcent action of simple syrup on the mucous membranes of the pharnyx.

Syrup is a useful vehicle in which to incorporate all too often bitter substances with cough-

suppressive or expectorant activities. A truly effective cough remedy, however, should not have to depend on the local action of the vehicle.

Since most benefits attributed to cough remedies are not due to local action at all, many cough preparations used today are in capsule form, and the traditional syrup is gradually being rightfully relegated to the museum of pharmacy.

Despite their wide usage relatively few trustworthy analyses of the effectiveness of cough remedies have been made because of difficulties in obtaining data. These difficulties are well described by Boyd(6, 7) in his extensive studies, and by Cass and Frederik.(8)

Observations are limited by such problems as the large placebo factor, variation in the causes of cough and errors of sputum measurements, if indeed expectoration even occurs.

Bickerman(9) has devised a method of testing cough suppressants by use of nebulized 25 per cent aqueous solution of citric acid administered by inhalation. In a double blind study on normal subjects he has evaluated the antitussive activity of various dosage levels of dextromethorphan hydrobromide, narcotine, levopropoxyphene, codeine, and placebo.

All drugs tested showed a better result than placebo. Thirty-two and one-half mgs. of levopropoxyphene had an effect equal to that of 15 mgs. of codeine.

Antitussive effectiveness persisted over a four-hour period on all drugs tested. This method is comparable to the guinea pig sulfur dioxide induced cough test used by Robbins(2) to evaluate the cough suppression activities of antitussives in screening tests.

Summary

Levopropoxyphene was observed to have both expectorant action and antitussive properties but no addictive effects. Tolerance did not develop.

Of 126 patients taking the compound in liquid suspension or in dry form in capsules in doses of from 100 mgs. to 600 mgs. daily, no significant side effects were noted, and 116 obtained good or excellent relief of their cough. In the dosage used no respiratory depression was found.

It was possible to replace potassium iodide with levopropoxyphene in most of these patients. We now administer levopropoxyphene as a basic drug in our treatment of chronic pulmonary disease.

Fifteen of the patients received one or more intramuscular injections of propoxyphene hydrochloride with results similar to those when comparable doses of oral medication was used.

In office practice we have observed that levopropoxyphene is an extremely effective cough preparation which appears to have the dual action of a cough suppressant and expectorant, the latter activity perhaps caused by a decrease in viscosity of the sputum.

Since patients have not exhibited tolerance to this drug and since it has not produced side effects such as constipation (frequently associated with comparable doses of codeine), levopropoxyphene gives promise of being a potent and safe new therapeutic agent for the treatment of cough without producing respiratory depression.

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Rocky Mountain States Get Medical Education Grant

A $200,000 grant from the Commonwealth Fund of New York will enable four Rocky Mountain states to join in studying their medical education needs under WICHE sponsorship.

Sources of Medical Words

Robert D. Smith, M.D.

This is the last of three articles on a subject which the author has pursued with obvious relish. His fund of information is liberal. His advice to aspiring medical writers is conservative. The Editor's letter box waits for the debaters.

THE ENGLISH language furnishes us with excellent examples of short and simple medical words such as arm, leg, toe, ache. The use of these terse, clear words should be encouraged. Cephalalgia for headache is pedantry at its worst. As new discoveries are made, plain English words should be used or invented rather than attempt to apply Greek-Latin derivatives that are too often difficult and cumbersome.

When new words are required, and, old ones should always be tried first, the entire profession would applaud competition in originality for short, euphonious English words. The drug industry has shown that new fanciful, concise words can be produced without limit. Medical writers must be alert to avoid ambiguity in selection of terms *Reticulohistiocytosis* is an example of a clumsy word.

Graeco-Roman Words

Graeco-Roman words are a prolfic source of medical terms. Most of them go back into antiquity and may be mixed with Egyptian and Asiatic elements. The early Greek or Roman was probably bilingual and used a mixture of each language. This explains the dual nomenclature we now find such as Cardia (G.), Cor, cordis (L.); dactylos (G), digitus (L.); derma (G.), cutis (L.); mastos (G), mama (L.).

Present day authors should recognize and accept the fact that all new words need not, in fact, should not, have a Greek or Latin origin. *Romance* words have a wide background of use and acceptance.

1. French words in common use are numerous; bruit, curette, debridement, douche, grand mal, migraine, tampon, tic, tourniquet are a few in daily use.

2. From Italian sources are the following: petechia, pellagra, malaria and belladonna, literally, beautiful lady.

3. Common Spanish words are mosquito, quarantine (i.e. forty days).

4. Portuguese has given the word fetichism (fetico, magic) to medical literature.

5. Modern German words are few — anlage being the most frequently used.

6. Arabic medicine was very advanced during the Middle Ages. At that time arithmetic and algebra were highly developed and in wide use. With the Renaissance, western students of Arabian medicine translated back to the Graeco-Roman so that few Arabic words survived. Most of them are chemical substances; alcohol, alkali, elixir, syrup, naptha, senna.

Words poorly translated into Latin are natrium (na, sodium) from "natri," and kalium (K, potassium) from "gali."

Four other Arabic words are in common use: nucha, neck; mater (dura and pia) from mother; basilic (inner) and cephalic (outer) veins.

Derivation of names comes from many sources. "Thalamus," is from the Greek, inner room; wall

or partition was called "phragma" (hence diaphragm); passages were "fances" and house entrance was "vestibulum" (L.) or "porta," leading to the "atrium" (synonymous with auricle). "Focus," was the fireplace or center of heat and light. "Fornix" was the arch and "stylos" the pillar. Water was carried by the "ductus"; "fistula" was pipe, and "cloaca" was the sewer.

Musical instruments are represented by "tympanum," drum and "salpinx" the trumpet.

Agricultural equipment such as a ploughshare is "Vomer"; tools are hammer, "malleus"; anvil, "incus."

Weapons, — a sword is, "ensis" or "ensiform," sword-like.

Jewelry is suggested by "fibula" or brooch and "peroneus" the tongue of a brooch.

Writing comes from "graphein" or graft (horticultural grafting slips were shaped like pencils). "Inoculate" is related to grafting, the bud being the eye or "oculus."

From Effects or Results

Various names are used to account for *certain affects* or results; "Trachea," is a rough air vessel; "Lumen," a light air space; "caecum" a blind space; "Sacrum," was considered sacred; "Beri-beri," indicated the weakness of a patient.

From use of an organ we have, "Thenar," to strike with that area; "Buccinator," trumpet muscle and "Sartorius," the tailor's muscle.

Indirect association created "quinsy," or self strangulation; "myopia," to close up the eye or squinting; "Thorax," the part covered by breast armor; "Pudenda," from pudere, ashamed, — of the external genitals.

Contraction of words is common, "Morbilli" from morbus or disease; "Typhus," mist or smoky vision in fever; "eclampsia," the illness like a "flash of light."

Transfer of words is exemplified by "asphyxia," absence or weak pulse; "archnoid," resembling a spider web.

Reversal is classic in the word "phlegmatic" from phlegein or burn now used to mean cold. "Valgus," originally meant bow-legged; it now indicates the opposite.

Words of *obscure* origin are many and in some cases very extreme; "astragolos," has over six meanings; "amnion," refers to bowl and lamb; "cataract," suggested something that impedes a flow, e.g. a water gate; "cretin" is from chretien or Christian; "acne" means point; "Lupus" refers to wolf and the origin of "abdomen" is unknown although suggesting fat or full belly.

History and *Mythology* provide a wide variety of words. Here are examples — "venereal," "aphrodisiac," "erotic," are all concerned with love; "morphia" from the god of dreams; "St. Anthony's fire," erysipelas; "St. Vitus's Dance," chorea; "priapism" is from Priapus, god of procreation; "sadism" is associated with sex cruelty and named after the notorious exponent, Marquis de Sade.

In Conclusion

From this brief introduction to medical words and terms it is apparent that the subject is complex, forbidding and often incomprehensible. Experts on the subject suggest rules to split words into their components but admit that to know the various meanings requires extensive training in languages and the classics. Although the most diffieult words are comparatively few in number, these same words are frequently used in different connections.

The purpose of this series of articles is to introduce the subject and make the plea for authors to use extreme care in issuing new words into our already overcrowded and confused vocabulary. Where new words are necessary they should always be short and descriptive. Abbreviation and numbers such as "He La Cell"; "Angiotension II," are good substitutes for Latin-Greek perplexities or personally named monstrosities (eponyms), such as Sjogren-Mikulicz Syndome. Good English words should be preferred and can be invented easier than trying to go back to a classic name.

With the publication of millions of printed words and the present tendency to invent new ones a board of nomenclature control is almost inevitable. If voluntary control of word production is not effective then some government agency will probably take over and then the medical dictionary could become a loose leaf publication with monthly supplements.

This concludes a series of three articles by Dr. Smith, of Phoenix, on medical words. "Doctors, Words, Controls" appeared in the May, 1962 issue of Arizona Medicine, and "Medical Terms — Origin and Use" was published in the July, 1962 issue.

Consultative Psychiatry

Jack B. Lomas, M.D.

Dr. Lomas reports the purpose and value of psychiatric consultation with trained personnel of community agencies. Need for psychiatric services appears less urgent than need for clearer understanding of what human calamities the psychiatrist can actually treat.

A WIDE gap still exists between the needs of communities for psychiatric services and the supply of psychiatrists and other trained personnel to fill these needs. Most psychiatrists find themselves involved for the main part in a one-to-one relationship with their patients. This limits greatly the number of people who can be seen and treated by them in a community.

Economic factors, in terms of time and money, enter into the picture as to availability and choice of psychiatrists. By default large numbers of people in need of psychiatric services get little or no help privately. And the majority seek help in community psychiatric clinics and public agencies, with long waiting lists.

When The Community Mental Health Services first began in Los Angeles County in 1958 (population about 6 million), it was felt by the advisors of the program that a real service could be performed to various community agencies in need of services by the development of a psychiatric consultation program. This plan was developed. And into its program psychiatrists in private practice were enlisted who were located in all the areas of the county. Many agencies operating without a psychiatrist were anxious to have periodic psychiatric consultations.

At first it seemed simple to designate a psychiatrist near some agency to help and work with the community problems in his area. But when one inquired from various psychiatrists, interested in this program their ideas of what constituted community psychiatric consultation, it was clear that the many approaches based on the particular orientations of each psychiatrist were too varied. And unless a basic understanding of the meaning of this method was developed, more disservice than service would result.

Techniques Workshop

To correct this situation, a Chief of Consultation Services in the Department of Mental Health was appointed. An all-day workshop involving the techniques of consultation was presented on two occasions to a group of about eighty psychiatrists in private practice who were interested in this type of community service. Heads of various agencies interested in consultative services from these psychiatrists were also present. These workshops were conducted by Dr. Gerald Caplan of the Harvard School of Public Health. The following ideas, based on much experience in this technique, were presented as a framework to uniformly guide the psychiatrists:

1. Mental health consultation was defined as an interaction process between two professional workers, namely, the consultant and the consultee, the consultant here being a psychiatrist.

2. The consultee was defined as a professional person from the social, educational health, or welfare field, e.g. teacher, counselor, public

Presented at the scientific breakfast meeting at Camelback Hospital, Phoenix, Arizona on October 10, 1961.

Clinical Professor of Psychiatry at UCLA.

Chairman, Los Angeles County Mental Health Advisory Board.

health nurse, principal of a school, probation officer, social worker, or psychologist, and so forth.

3. The consultant was to provide assistance to a consultee regarding a *work* problem. The consultant was not to do psychotherapy in this setting. Anxiety in consultees was markedly reduced when they were made aware that they themselves were not being "psychoanalysed."

4. The consultant could make suggestions that the consultee was free to accept or reject. Only a supervisor who was not in the role of the consultee could exercise authority, if necessary, in order to have a suggestion implemented by a consultee.

5. Consultants avoided direct services to clients of an agency or a consultee wherever possible. Sometimes consultees might request psychotherapy for themselves or their clients. The consultant could direct the consultee or client to appropriate sources for personal help.

6. Consultation was to be an indirect service to schools, social welfare and assistance agencies, probation and police departments, church groups, public health vocational rehabilitation agencies, and children's residential settings with particular emphasis on agencies serving children in the community. This emphasis on services to children is demonstrated in the thirty-three agencies in the county now presently being supplied consultative services by psychiatrists in private practice. Of these, sixteen are exclusively involved with services to children and eight are involved with services to children and adults.

Dr. Caplan's Concept

Dr. Caplan's basic concept of consultation is that it is a service designed to assist professional people in professions other than psychiatry and to utilize the services of a psychiatrist or some other mental health professional, such as psychologist or a psychiatric social worker qualified for this work. Plans for expansion of our consultation program include a number of these qualified professionals who will work directly under the supervision of a psychiatrist.

Evaluative methods are being developed to determine the relative advantages of one sort of consultation over another, as well as the relative advantages of consultation to one sort of agency over another. Some preliminary assessments indicate a priority for providing services to less sophisticated consultees as opposed to more sophisticated ones, and a priority should be offered to agencies that provide services to children.

Need for Consultive Service

Consultative training and techniques are now being provided in a few training centers, notably the Harvard School of Public Health, under the guidance of Dr. Caplan, and the Training Center for Community Psychiatry recently established in Berkeley, with Dr. Portia Bell Hume as its head.

In many of the far western states where long distances exist between the needs and the availability of services, this type of program can be useful. Workers in outlying areas do feel isolated from the more populated psychiatric centers. This kind of service would minimize this sense of isolation and increase the effectiveness and caliber of their work.

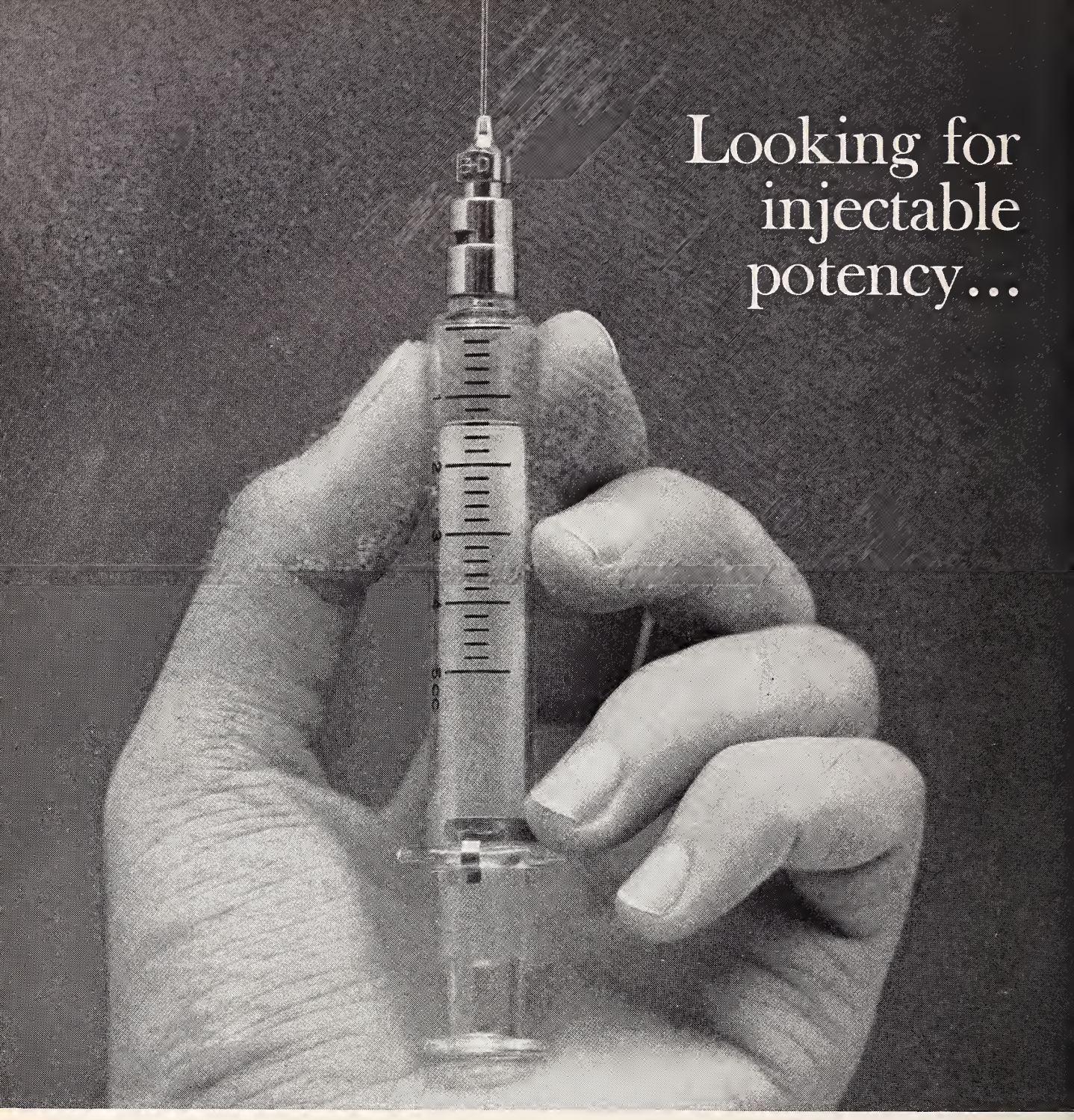
The type of workshops for consultants and consultees that proved so useful in Los Angeles County should be planned before proceeding with this program. Psychiatrists in private practice, as well as other professionals mentioned previously, through these programs have been induced to step beyond the boundaries of their offices, to participate in many ways in the improvement of mental health services in their communities.

Consultative services promise to grow in importance as a useful and expedient discipline to meet the challenge of time, distance, shortages of services and personnel in widespread areas with unmet needs, and should be encouraged as soon as possible in its development.

One of the purposes of this paper is to encourage the arrangement of one or two-day meetings in areas where this type of consultative service has not yet been developed. Principals of agencies, as well as private psychiatrists interested in planning to give a few hours a month toward this program, could invite and meet with personnel experienced in presenting the methods in developing this kind of program. In this way much satisfaction in further closing the gap between the needs and the supply of psychiatric services and consultations in widespread areas will begin to meet this problem.

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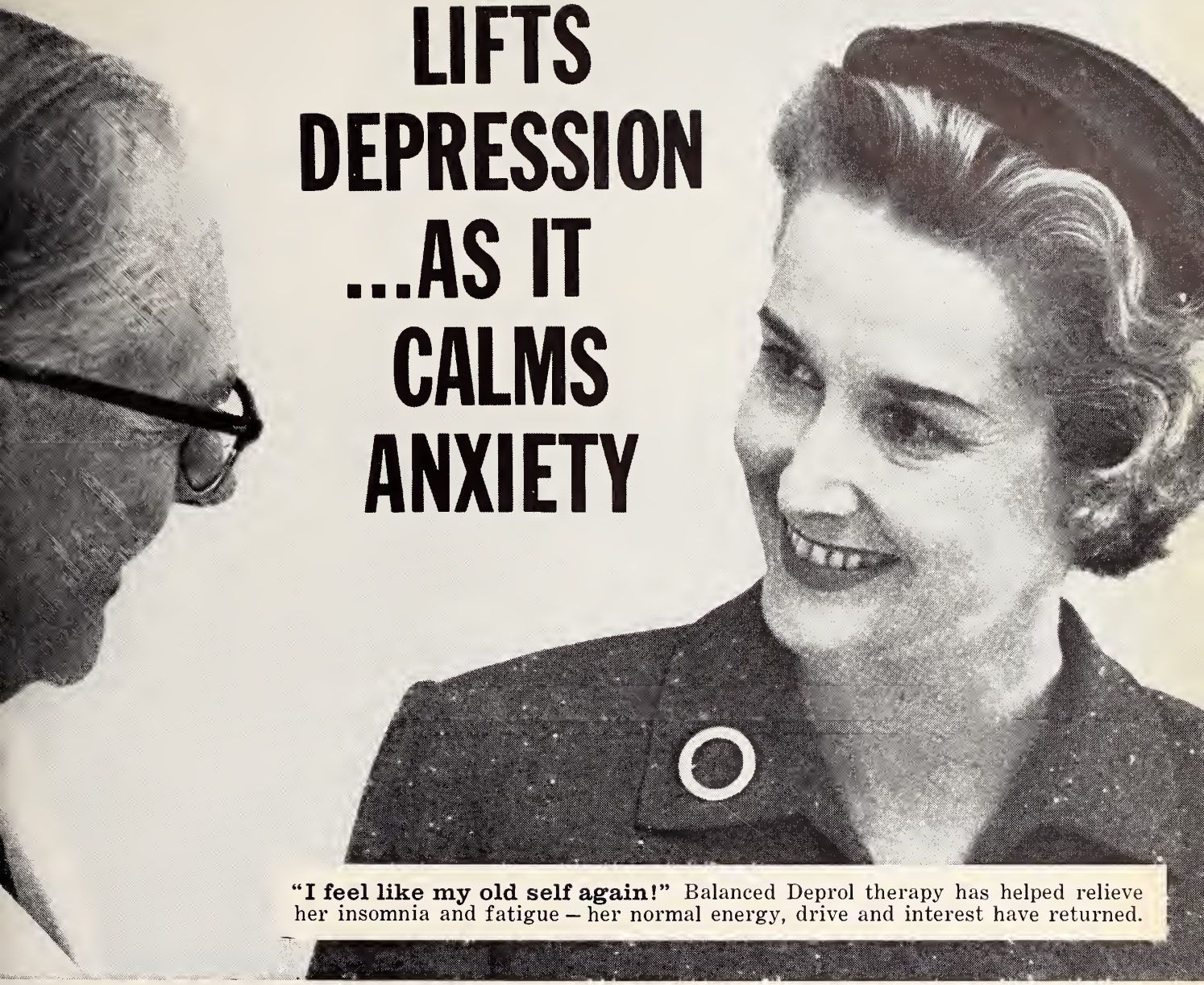
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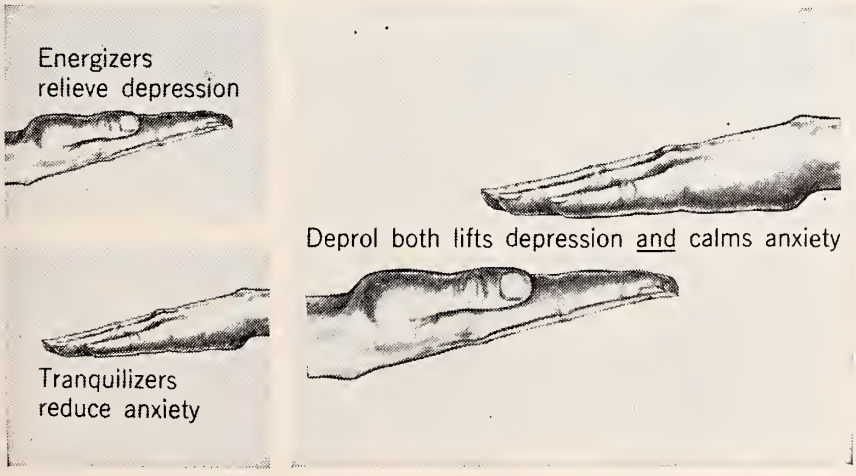
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There will be panels and symposia on pediatrics and gynecological topics, also on renal hypertension as well as on emphysema and cor-pulmonale.

In addition to that, there will be various individual papers by prominent speakers from both countries.

On December 5, the program will take place at the Tidelands Hotel.

On December 6, it will be at St. Mary's Hospital. At that time the artificial kidney will be demonstrated.

On December 7, the session will take place at Tucson Medical Center and there will be a visit to the Cardio-Pulmonary Laboratory as well as to the Radio-isotopes Laboratory.

The nonscientific portion of the meeting will consist of a brief opening ceremony which is hoped will be attended by the governors of Arizona and Sonora. On the same day, there will be a dinner at the Tidelands. Following that, a movie on the mass inoculation against polyiomyelitis in Phoenix will be shown. In the evening, there will be a cocktail party and buffet at the Saddle & Sirloin Restaurant.

On the second day the luncheon will be held at the Old Pueblo Club jointly with the ladies.

The traditional dinner-dance on the evening of the last day at the Tidelands will officially terminate the session.

It is anticipated that there will be a substantial attendance from below the border and that, more than ever, this coming meeting will provide the welcome opportunity to fraternize with our colleagues from Mexico.

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so that we may canvas the anticipated attendance at this time on a preliminary basis. However, additional information will be sent requiring more definitive commitments so that arrangements can be made in a more efficient manner.

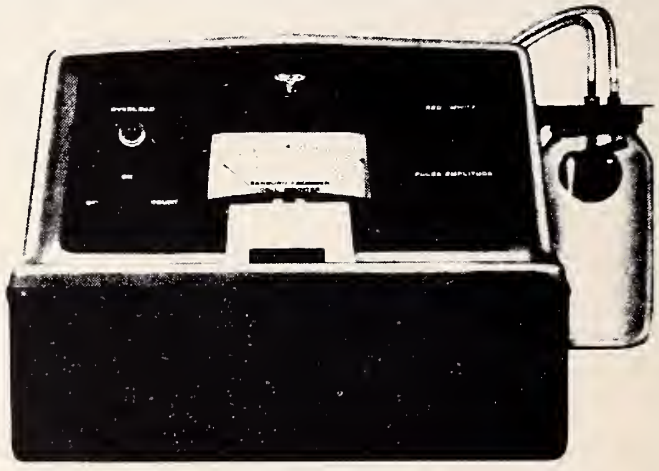
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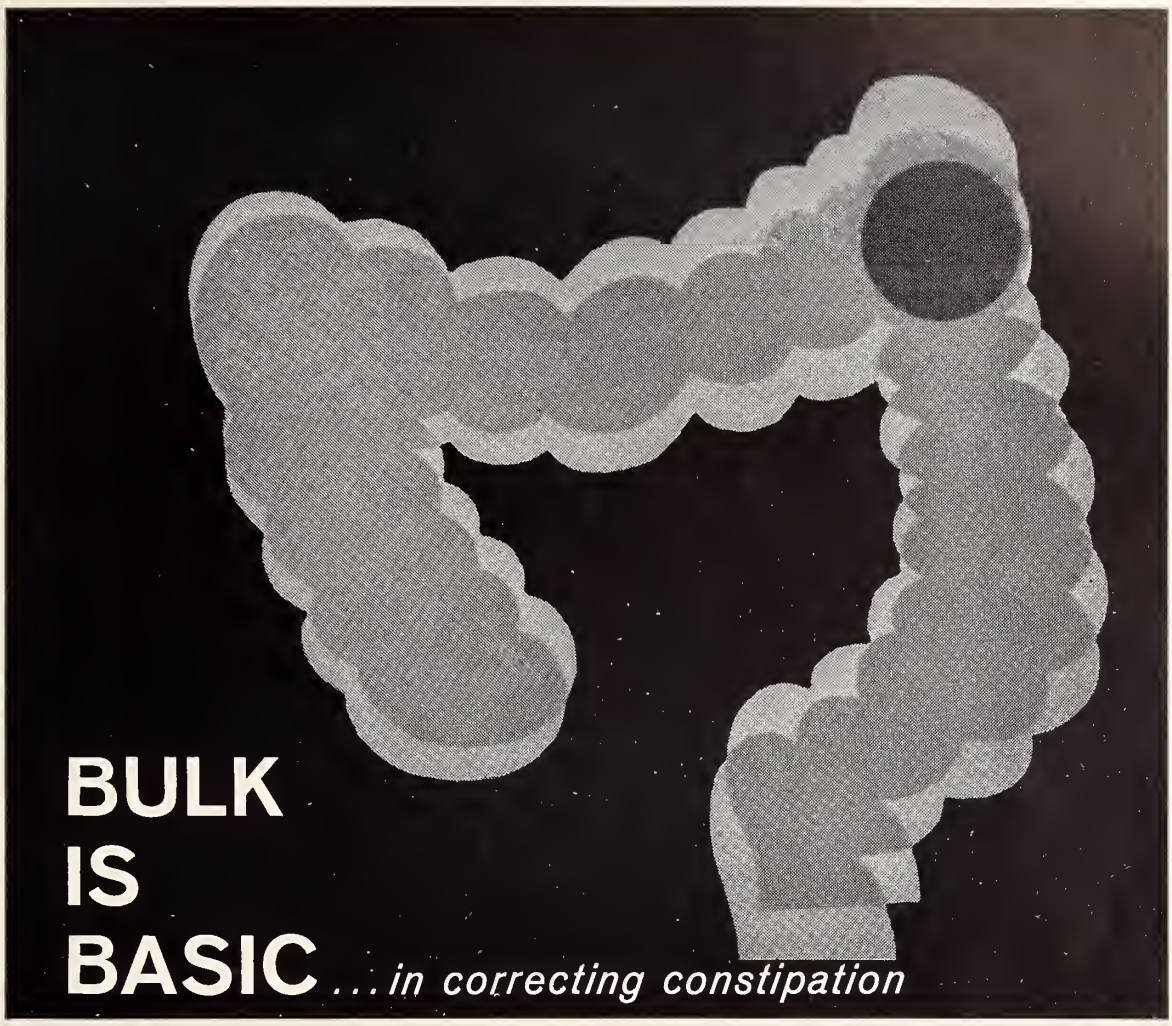
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Children: ½ teaspoon (=2.5 cc.) per 15 lb. of body weight every four hours day and night until stools are reduced to five daily, then every eight hours for three days.

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ALTERNATIVES?

HOW do you want your medical care delivered? Some of the top ranked politicians have threatened to make medical care for the aged through the social security system the paramount domestic political issue.

President Kennedy has asked the people to ". . . return in November a Congress that will support a program like medical care for the aged."

The American Medical Association has been singularly credited as THE opponent of "Medicare" with the inference that its doctor members are not of the same opinion, whereas, the record reveals that only 10 percent of all doctors, 22 per cent of the Democratic doctors, and 24 per cent of those who are not members of the A.M.A. support the King-Anderson proposed legislation.

Our President recently stated in his remarks relative to the defeat of his Medicare bill, ". . . a program which has been fought by the American Medical Association and successfully defeated."

We are justly proud of this lofty altruistic achievement.

Although the medical profession may have played a key role in calling the people's attention to the true significance of this type of legislation, we cannot take all the honors. We share the distinction with the many who fought to preserve free enterprise for our Republic.

The insufferable yoke of socialized medicine has been temporarily returned to the basement storage. However, it will be paraded again during the coming Congressional elections, to challenge that system which assures the best medical care and the continued rapid improvement in that care.

The fostering of our noble objectives leaves us with no alternative except to support with vigor those candidates whose wisdom supersedes their conception of political expediency.

LESLIE B. SMITH, M.D.

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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Exclusive Publication — Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

7. Reprints will be supplied to the author at printing cost.

Editorials of Arizona Medicine are the opinions of the authors and do not necessarily represent the official stand of The Arizona Medical Association. The opinions of the Board of Directors may be sought in the published proceedings of that body.

INSTINCTS

HAVE you felt that reading in psychology and psychiatry is somehow unsatisfying? It is not that the writer comes to no scholarly conclusions. Rather, it is as if we never really understand his point of departure.

To borrow a joke: the psychiatrist, like the liberal, has both feet firmly planted in mid-air.

Environmental influences, past and present, are adduced to explain a mental disorder. The explanation may be internally consistent and very plausible. But one asks how another individual in comparable circumstances attained a healthy adjustment.

The physician comes then to check the organ systems and the internal secretions. Subnormal values and abnormal ratios often seem incidental. And we have no axial orientation for what are causes and what are effects. The theorist helplessly invokes his deus ex machina, hereditary predisposition.

In all of these approaches to the study of human behavior – the psychological, the physiological and the genetic – and in their combinations, we are still up in the air.

The groundwork has been neglected; aye, even renounced. The groundwork is the identification of the instincts of the human species.

A long time ago some attempts were made to define and classify the various instincts of man. Efforts were directed toward determining whether and in what ways his instincts were different from those of other primates and those of other animals in general.

The task proved insuperably difficult and was abandoned. Our science then rationalized its failure by discrediting the concept, instinct, and by denouncing all classifications, old and new. The term is scarcely to be found in the textbooks of neurology and psychiatry.

Yet the instincts are there in every member of the species.

They are deeper and more basic than the hormones and neurons which interact with them. They are broader and more pervasive than the particular heredity of the individual. They are the prime movers of all purposeful or goal-directed behavior.

The structure of most psychological theories is erected on a pitiful error: Freud's notion of two opposing instincts, eros and thanatos, life-wish and death-wish, constructiveness and aggression.

Freud saw people in hospitals as we observe animals in cages. In such artificially restrictive situations only sexual preoccupations and random destructiveness will be observed. He confused instinct with tropism (attraction-repulsion; larvae turn and creep away from the light; the moth flies toward it).

Instincts are not polar, do not oppose one another. They work in harmony.

Surely there are more than two instincts. The human is not more bleakly endowed than the other animals with their rich arrays of complicated instincts. Has man only sex and the instinct of self-preservation? Is the sexual instinct itself no more intricate and beautiful than caudal copulation?

There are at least a dozen irreducible instincts. They underlie the superficial and secondary aspects of behavior to which the psychiatrist has paid exclusive attention.

Instincts are the force behind our methods and selections in food gathering and storage. (Simple hunger and thirst are more like tropisms. It is the complicated technique of killing prey and bringing it home that illustrates instinct.)

INSTINCTS initiate the play of children, rehearsing in miniature their ensuing roles (the boy with his toy gun and the little girl with her baby carriage).

Instincts prompt us to smear and draw, to take apart and put together. They push and guide us toward home building and gardening. They incite us to defend our possessions and to cooperate in repelling the invader. Witness again the territorial wars of adolescent gangs.

Instincts arouse our curiosity, vis a tergo, and influence us toward exploration and migration. They urge our mating and impel the care of our young. Even altruism and self-sacrifice are sometimes instinctive and not unknown in other mammals.

The bee and the beaver, the gorilla and the man, each beats out a Morse code of comunication. Insects and birds and teen-agers all stomp to and fro in their mating dances. Men and wolves and night birds sing by the campfire to frighten away strangers when the moon is full.

Take modesty as a piquant example of instinct. At first glance it would appear to be primarily a learned or cultural reaction. Not quite. A fully developed young woman, after an interval of several months' amenorrhea, will in-

advertently display some disregard or lessened embarrassment at exposure during physical examination. On return of regular menstrual cycle she will be noticeably more modest.

Does the interplay of hormonal influence and social consciousness account for her modesty? No; the instinct with its natural, species-unique timing is the wellspring of her modesty. Aspects of reproduction, like menstruation and nursing, are variously attended by modesty in other species than the human.

THE instincts cannot be explained away. They are already there. They work in cooperation with endocrine and environmental stimulation — but precede both.

They are prior to imitation or experience or habit or cultural conditioning. They are enriched but not altered by learning. They remain powerful in their own right. Intelligence does *not* supersede or compete with instinct.

Intelligence and the primary emotions (desire, anger, fear, disgust) are the handmaidens of instinct. Each instinct makes use of cognitive, affective and conative faculties (think, feel, strive) but these faculties do not explain instinctive behavior.

The instincts reside in the soma and have their source in the biology of the species. They act through the brain and mind of man, with or without consciousness. Each instinct is or has its own blueprint or template, phylogenetically adapted to the environmental situation. These templates can be altered or effaced only by stark physical means: mutilation, irradiation, prolonged chemical corrosion.

Every instinct presses through complex chains of activities toward its specific gratification. Each demands an appropriate share of the energy of the individual. For the energy or force of the instincts we have as yet no name, no Einsteinian formula, no calipers or gauges. Who can measure the spider's determination to spin and repair his web?

It is a force to be reckoned with. If you block one after another of the instincts of any animal, including the human, you can observe a coiling and mounting fury. It will generate and duplicate any of the internally or externally destructive disorders which fill our asylums and penitentiaries.

The bear scratches his message on the bark of a tree. He feels some gratification in doing it. He would overcome obstacles to get it done. He knows what he is doing. But he does not know why.

We write our editorials on the bark after it has been highly processed. We do not really know why. Psychological explanations are in the last analysis unsatisfactory. The source is another of the many instincts which we share with all animals.

Society does not turn to our science for more shock treatments and tranquilizing agents, more couches and more elaborate metaphysical theories. It is not our function to deny or destroy the instincts. It is our urgent and basic responsibility to identify and study them.

Then and only then can society make wiser provision for their natural and necessary activity.

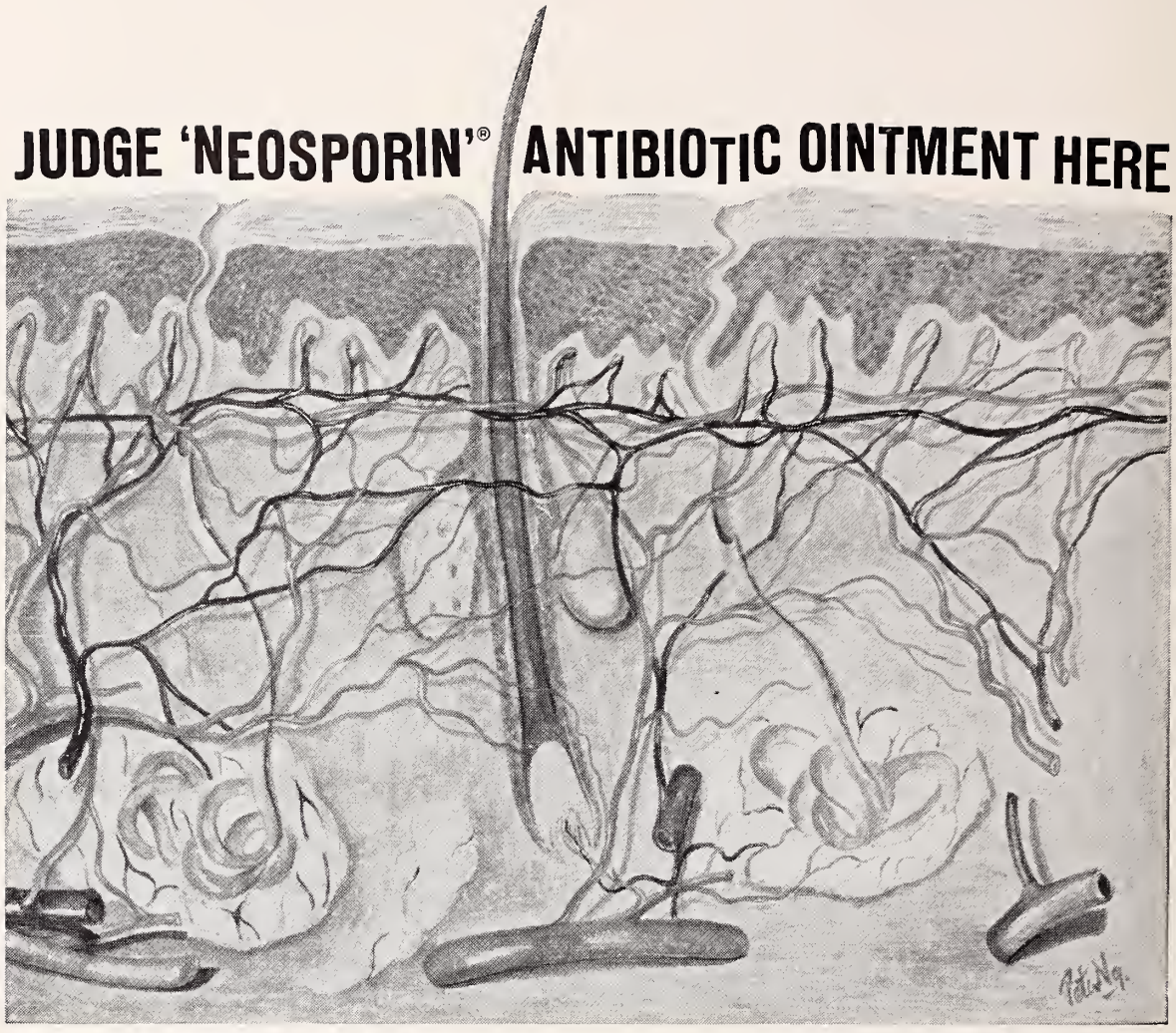
WILLIAM B. MCGRATH, M.D.

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"In 1960 there were 662 state approved schools of practical nursing in the United States. In 1950 there had been only about 150. In this ten-year period the number of yearly graduates from practical nursing programs increased from about 3,000 to over 16,000."

From "Education for Practical Nursing, 1960" A study of nursing education by the National League for Nursing, Inc., 10 Columbus Circle, New York 19, N. Y.

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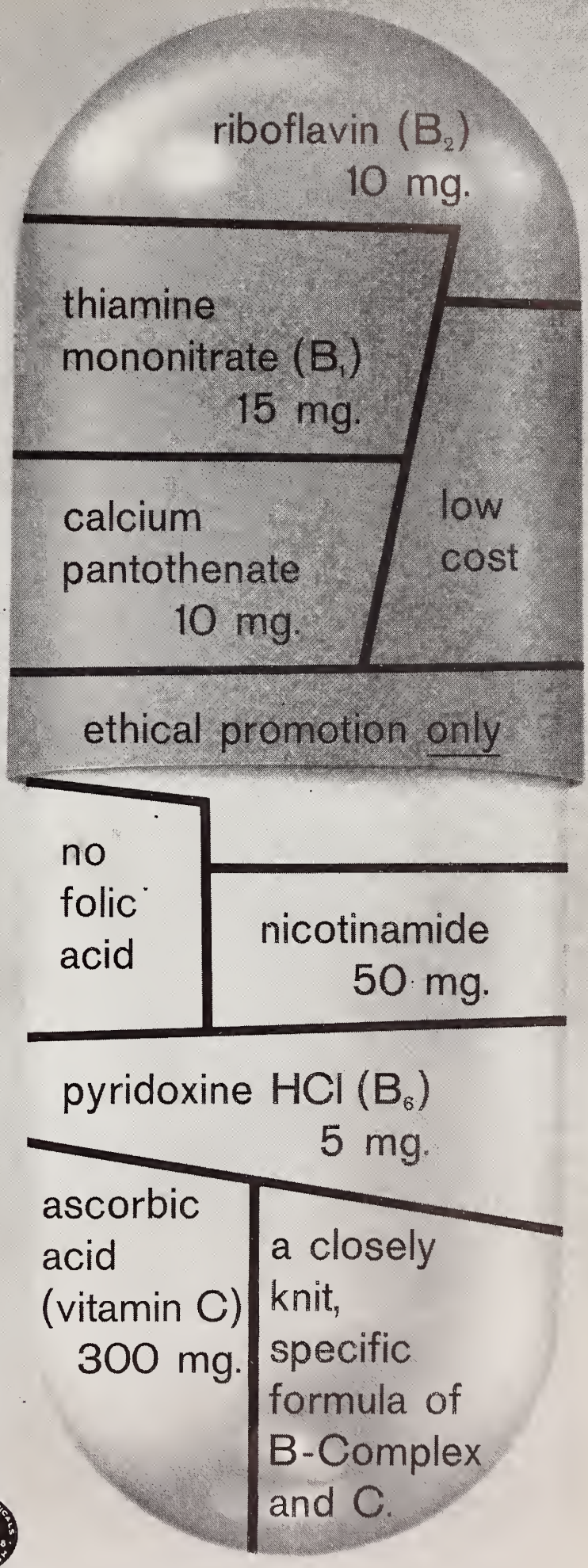
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Malwina T. Lemmle, M.D.

1901 - 1962

On May 27th of this year Dr. Malwina T. Lemmle, a friend of the mentally ill of Pima County, died in St. Mary's Hospital of carcinoma of the pancreas.

She was born 61 years ago in Buffalo, New York, the daughter of a prominent German banker and solid housewife who, along with a brother and two sisters, survive her.

Graduating from New York State College for Teachers in Albany, she began a teaching career which at first was confined to children. But following her attainment of a master's degree in the biochemical sciences at the University of Michigan in 1929 and a doctorate in medicine, she continued to be a great teacher to all who had the honor to assist her in her work.

She served twelve years in the state mental hospital system in New York at Binghampton and Rochester, caring for patients and imparting her unusual knowledge as well as common sense to her younger colleagues and the psychiatric nursing personnel.

Because of an annoying fibrositis she left the farm academic, though thermally frigid atmosphere of upstate New York, to come to the wild west and the newly established Tucson Medical Center where as a woman medical resident — a strange combination for the rugged individualists — she recovered her health, and a year later in 1946 entered the private practice of psychiatry.

No medical politician, she was truly appreciated by those who worked with her and saw her transform the care of the mentally ill from brutal incarceration in the county jail through primitive care in the County Hospital halls to the modern closed ward at Pima County Hospital. This was not done without great sacrifice of her time, health, and financial welfare, for she cared for rich and poor without regard for recompense and at times was hampered by her politically astute colleagues who underestimated her capabilities.

Always a lady, she fought back only when the welfare of the patient was at stake and proved herself to be a superb expert witness in contested court cases, a role which gave her justifiable satisfaction.

Disdaining medical politics as unbecoming a lady, she was prominent in the American Association of University Women, the Order of Eastern Star, Pi Lambda Theta as well as the Zonta Club of which she was local president in 1960 and area director in 1961. Happily, she attended their convention in Hawaii shortly before her terminal illness.

She will be remembered by her colleagues in medicine, the legal profession, and the courts, as an unselfish worker, a stickler for detail, and always a gracious lady.

John K. Bennett, M.D.



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Dosage:

Children from 6 months to 1 year, 1/4 teaspoon; 1 to 3 years, 1/2 to 1 teaspoon; 3 to 6 years, 1 to 2 teaspoons; 6 to 12 years, 2 teaspoons. Every four to six hours as needed.

How Supplied:
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1. Stevenson, L.E.: M. Ann. District of Columbia *30*:409 (July) 1961.



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Prescribing information adopted Jan. 1961

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OCCASIONALLY you will hear a loose remark that hospitals are prone to provide Blue Cross members with preferential treatment, or that they are discounting the subscriber's bill by their contractual agreement with Blue Cross.

We are certain that if a given number of these same people could be transported to heaven and back, a prescribed percentage of them would be critical of such celestial confines.

Our point? That we are never without criticism no matter what the sitution or occasion. You can write it off as one of the human frailties.

The philosophy that traditionally applies to nonprofit hospitals, in turn applies to the hospitals' own prepayment structure, Blue Cross. The nonprofit principle was adopted from the outset by hospitals and then by Blue Cross.

Those who were first instrumental in caring for our sick felt, as do those who currently care for the sick, that the health of mankind was and is a community problem. The humanitarian aspect of providing care has always been that it should be done without profits accruing to individuals.

The community hospital, as its name implies, belongs to the comunity, and as such serves the community. The same thing, in essence, is true of Blue Cross.

Representatives of hospitals have a major say concerning what takes place within Blue Cross. Hospital administrators and people from their boards of trustees serve on Blue Cross boards and have, rightfully so, a great deal to say about the policy of Blue Cross and the operation of the organization.

Hospital people have a major and important voice in what the Blue Cross benefits are and what the rates will be to provide these benefits.

This same prerogative has never been offered, at least to any degree, to hospital people as far as their being a part of the composition of the board of directors of insurance companies.

The obligation of community hospitals and Blue Cross is to the public. Because of this storng and ever present obligation, the two organizations have combined their efforts in providing services to the enrolled Blue Cross members, generally on an unlimited basis rather than providing limited indemnification on each hospital stay.

Because Blue Cross, through its contractual agreement with its member hospitals, offers services rather than limited cash allowances, as the cost of hospital care increases from year to year, the value of unlimited Blue Cross services obviously grows ever more valuable.

Conversely, insurance benefits based on an indemnification basis remain the same from year to year. Thus, if a certain amount is allowed for the daily room and board today, as compared to five or ten years ago, you can readily see that this allowance becomes of less value in relationship to the current hospital costs and charges, with a lesser ratio of benefits accruing to the subscriber.

Such advantages of a service program are apparent. Its existence is solely for the good of the community and the people therein, again based on the traditional concepts of providing care for each other.

And as we said in the second paragraph, you will always find a prescribed percentage of people who would be critical of such celestial confines, and we might add, anything else for that matter.

Robert R. Rinhart
Public Relations Director
Blue Cross - Blue Shield

The United States Public Health Communicable Disease Center, Phoenix Field Station

"Herein is recorded my reaction and as near as possible the words of Melvin H. Goodwin, Jr., Ph.D., Scientist Director of the Phoenix Field Station, as we discussed the new housing construction for the United States Public Health Communicable Disease Center, Phoenix Field Station." Norman A. Ross, M.D.

Mel Goodwin and I viewed what was once a field, a part of the Phoenix Indian School Farm on North Seventh Street in Phoenix.

This nearly two acres on Seventh Street is bordered on the south by the Phoenix Veterans Administration Hospital, on the west by what may in the future be a city park, and on the north by the athletic field of the Phoenix Central High School. On the northeast corner of this site is a tool house, to be sure. Immediately behind this are trucks, pickups, workmen's cars, and the

ever-present rolling drum of a pre-mix carrier. There are mounds of earth. There are stacks of cement blocks. Men, equipment, and supplies dot the area. Footings are in. The Phoenix Field Station laboratory is being built to order.

Immediately before this ground was declared surplus, young Indians worked, roamed, on what now is to be the most modern of modern health laboratories. . . . A laboratory built for the complete study of diarrheal diseases, primarily. The Indian could well leave his land for such a project, for it is he who suffers most from this scourge. It is this scourge that accounts for the high mortality rate among the infants of his race.

The diarrheal diseases are no respecters of race as evidenced by the high mortality rate among infants of we more recent arrivals in Arizona.

The Indian wards of the government and we others who will benefit from these studies are to feel the effects of the physician-scientist, the toxicologist, the bacteriologist, who are now to be properly housed as they collect specimens, culture same, study the behavior and the environmental factors conducive to the virility and spread of these dread pathogens. We and they hope for vaccines and preventive measures. We have full knowledge that our colleagues here, and those others in the para-medical sciences that are here associated with them, must find the cause if we are to hope to work the cure.

I shall now approach Mel Goodwin's words as closely as possible in giving you the background and the specifics as related to the United States Public Health Service Communicable Disease Center, Phoenix Field Station.

The beginning of construction last month on a new building for the Phoenix Field Station of the U. S. Public Health Service's Communicable Disease Center drew attention to evolution of the service's work on infectious enteric diseases. These studies cover almost thirty years, of which more than the last five have involved intensive planning to develop this national facility in Phoenix.

In common with other modern laboratories, the physical structure which looks like a building is actually a complex machine. This one was designed to provide the physical facilities for observation and experimentation that are prerequisite to development of control measures against infectious diseases. The 38,000 square feet of space in the laboratory incorporates many unique features.

One of the five separate units is devoted to offices, library, and meeting rooms. The mechanical area for machinery and shops occupies another section. The remaining three units include the laboratory areas. The flow of air in each laboratory room can be adjusted to make the room negative, positive, or neutral with respect to air pressure in adjacent areas. This enables precise control of air movement when working with infectious material. Quarters for isolating experimental animals are provided in a central area accessible to the laboratories.

The principal mission of the Phoenix Field Station is the control of infectious enteric diseases in man. This group of diseases is second only to respiratory infections as a cause of death among infants and as a cause of time lost because of illness among workers and students. The work has three major objectives: 1) to determine what bacterial, parasitic, and viral agents — or physiologic condition of the hosts

Dr. Ross' Contribution

"When they start building the new Communicable Disease Center . . . they should dedicate the bricks to Norman Ross. For it was Norman Ross, probably more than anyone else, who made possible establishment of the center in the first place.

"*Dr. Ross energetically encouraged location of the station in Phoenix and did much of the organizational work in connection with securing the invitations and cooperation from civic and health officials, locating and arranging for quarters, and obtaining other support necessary for organization of the new facility,* said Melvin H. Goodwin, Jr., scientist director of the station.

"*He was instrumental in obtaining full cooperation and encouragement of both the Arizona and Maricopa County medical societies. The enthusiastic support of the local medical group and of the state and county health departments were deciding factors in selection of Phoenix for the station,* Goodwin said.

"And because of the dominant role he played in coordinating efforts to bring the Communicable Disease Center to Phoenix, dedication of some of the bricks to Dr. Norman Ross would seem highly appropriate."

"Round-up"
Official Publication
Maricopa County Medical Society
November, 1961

– are associated with acute enteric infections, 2) to determine how the various infectious agents are maintained and transmitted in the environment and under what circumstances symptoms are produced in man, and 3) to devise, apply, and evaluate specific techniques for control of enteric pathogens.

The research projects currently underway in the present laboratory at 706 East Adams Street cover a wide range of enteric infections. Studies range from investigations on acute diarrhea of infants characterized by high mortality to viral gastroenteritis noteworthy for high morbidity and ill-defined etiology.

The program that will be continued in the new laboratory is a far cry from work initiated more than a quarter century ago. The emphasis then was on classic enteric diseases such as bacillary dysentery and typhoid fever. Cholera had not long waned as a prominent public health problem. While the residue of some of these problems still receives attention, efforts are concentrated on the less well-known infections; for example, those of viral etiology, for which effective control measures are not available. Some of the accomplishments of the station during the past five years are reported in the articles listed below.

This laboratory was located in the Southwest because of the high prevalence of enteric infections in this area. Phoenix was selected as headquarters for the activity because of the substantial support and cooperation offered by the medical community and by the operating health departments in Arizona.

Work with enteric diseases and investigations of the toxic hazards of insecticides now receive principal emphasis at the Phoenix Station. However, the laboratory is adaptable to a variety of investigations related to communicable diseases. The Communicable Disease Center, under which the Phoenix Station operates, is a major division of the Bureau of State Services in the U. S. Public Health Service. Dr. C. A. Smith, an Assistant Surgeon General, is director of the center.

We Arizona physicians are proud of the work and the dedication of our personable, knowledgeable colleagues at the Communicable Disease Center, Phoenix Field Station.

The Arizona Indian's, the Arizonan's health future is that much brighter *here at home for* what we feel will be the accomplishments of this laboratory of the United States Public Health Service Communicable Disease Center and our own Phoenix Field Station.

I offer references to recent scientific literature as proof of the industry of the personnel who operate in and out of the United States Public Health Service Communicable Disease Center, Phoenix Field Station.

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12. Principles and Practice of Medicine, Christian, Sixteenth Edition. Cholera Infantum: Hydrencephaloid cholera (Marshall Hall).°°°°an infant who has had an attack should be especially watched throughout the hot weather.°°°°During such time it is rarely safe to return the child to a full diet.°°°°A change of air to seashore or mountain often is followed by marked improvement.°°°°

Arizona Location Inquiries

Many inquiries concerning location in Arizona have been received by The Arizona Medical Association, Inc.

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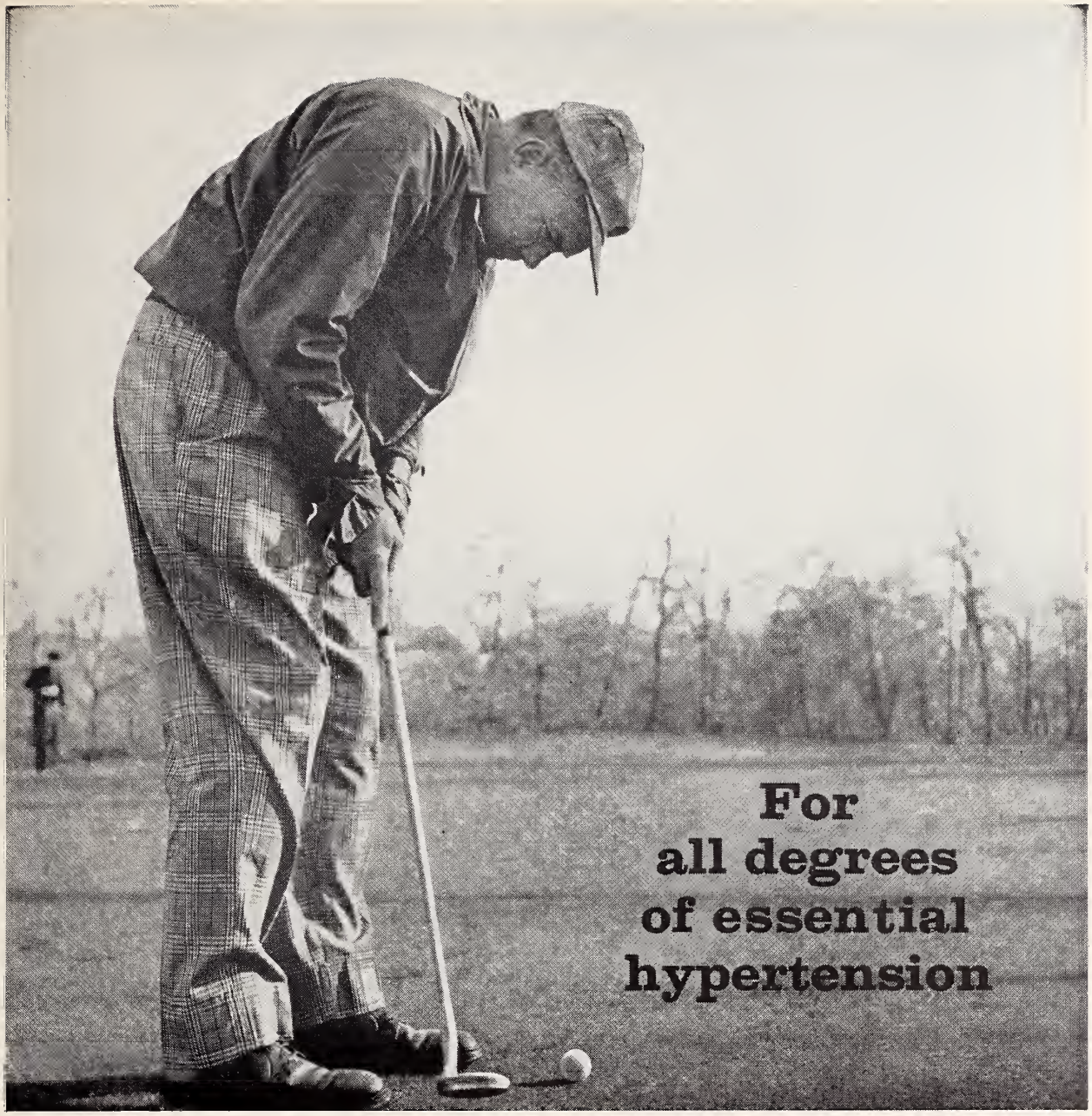
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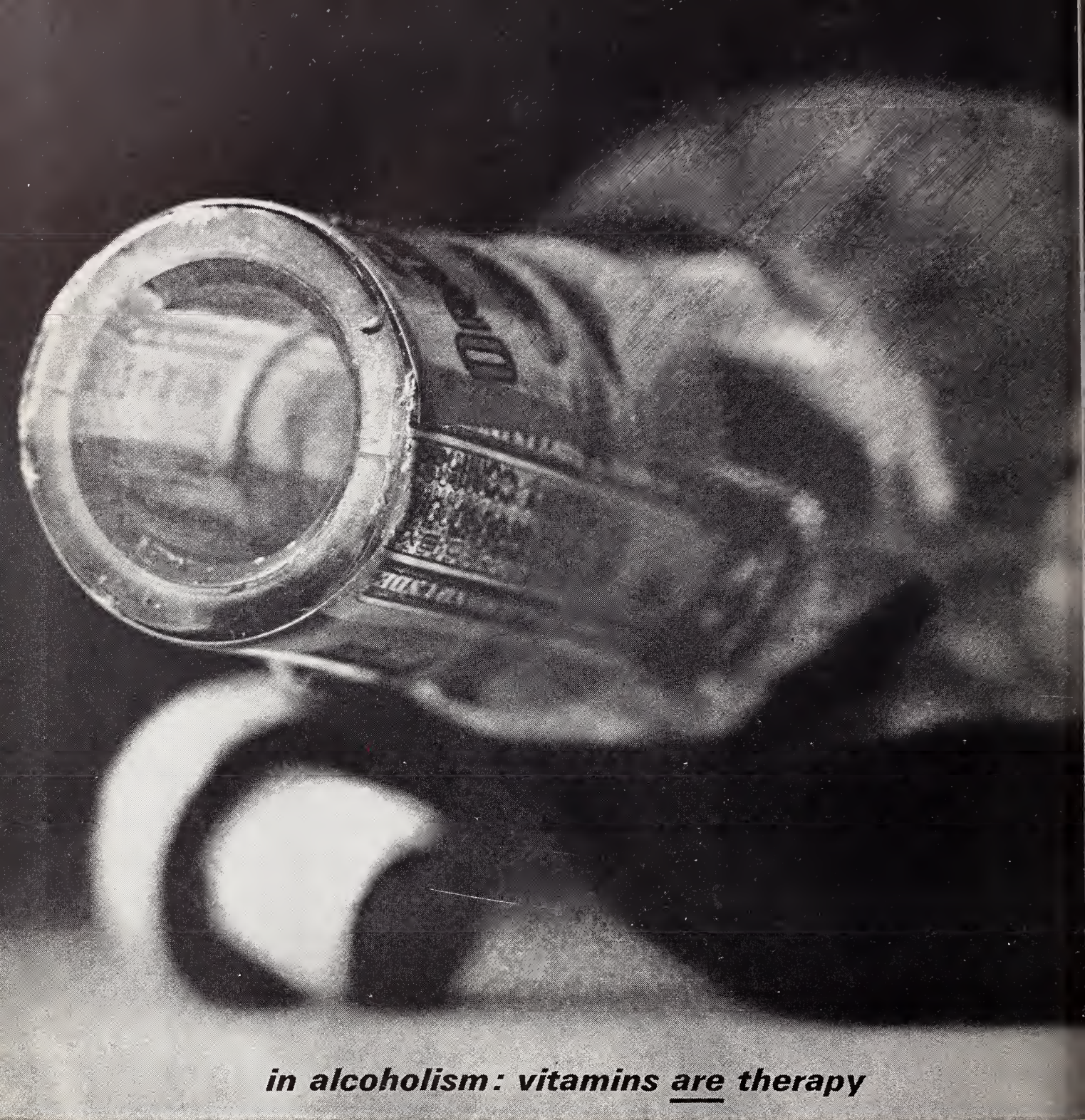
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The enrollment charge is $10.00 for both Friday and Saturday sessions, or $5.00 for one session. Checks should be made payable to Good Samaritan Hospital.

An outline of each presentation will be distributed to all physicians who attend the seminar meetings.

PROGRAM FOR OBSTETRICS-GYNECOLOGY

Friday, November 9, 1962

Moderator: William E. Crisp, M.D.
Each presentation will be followed by a 15 minute question and answer period.

1:00 p.m. Registration
1:30 p.m. Office Gynecology
William E. Crisp, Jr., M.D.
2:10 p.m. Hormones Uses — Abuses
Raymond Jennett, M.D.
2:50 p.m. Intermission
3:05 p.m. Toxemia
Robert Gullen, M.D.
3:45 p.m. "When is she deliverable?"
Gordon Gilbert, M.D.

Saturday Breakfast
Seminar (combined Ob-Peds)

8:00 a.m. Rh Problem
William Lawrence, M.D. and Edward Sattenspiel, M.D.

PROGRAM FOR PEDIATRICS

Saturday, November 10, 1962

Moderator: Herman Lipow, M.D.
Each presentation will be followed by a 15 minute question and answer period.

8:00 a.m. Roundtable Discussion by Obstetric and Pediatric Department
"Management of Erythroblastosis Fetalis"
Discussants: Jerome Kaye, M.D., Richard Creasman, M.D., Edward Sattenspiel, M.D., and William Lawrence, M.D.

9:00 a.m. Diagnosis and Management of Cardiac Problems in the Newborn
Speaker: Marian Molthan, M.D.

9:30 a.m. Practical Office Diagnosis and Therapy of Anemias in Childhood (or is Imferon Ever Indicated)?
Speaker: Richard Boas, M.D.

10:15 a.m. How to Help the Parents Accept a Newly Born Mongoloid Infant — The Parents' Viewpoint.
Discussants: Herman Lipow, M.D., Mrs. Donald MacDougall, Mrs. Eugene Henning, Mrs. Harley Petterson.

10:45 a.m. When Is a Child Too Small — Tips on the Management of the Child with Short Stature.
Speaker: Joseph Kirschvink, M.D.

11:15 a.m. Newborn Babies Who Vomit: A Practical Approach to the Diagnosis of Vomiting in the Newborn Period.
Speaker: Lawrence Linkner, M.D.

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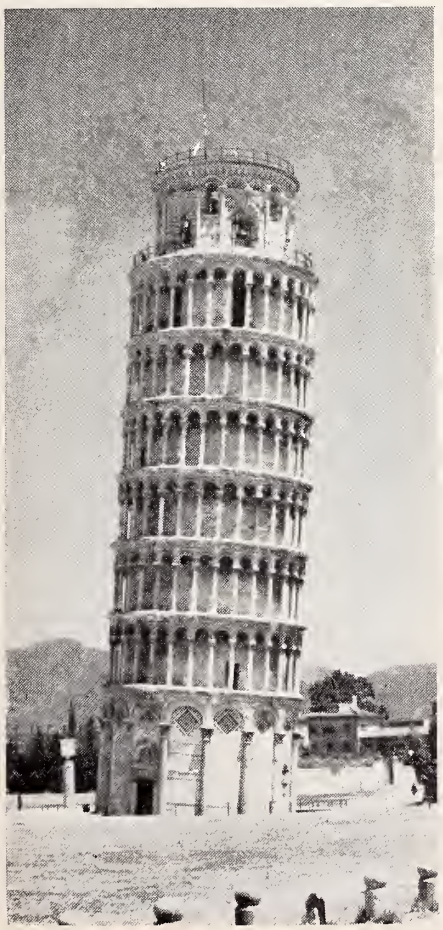
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2. Thyroid-Androgen Relations, L. Hellman, et al., The Jrl. of Clin. Endocrinology and Metabolism, August 1959.

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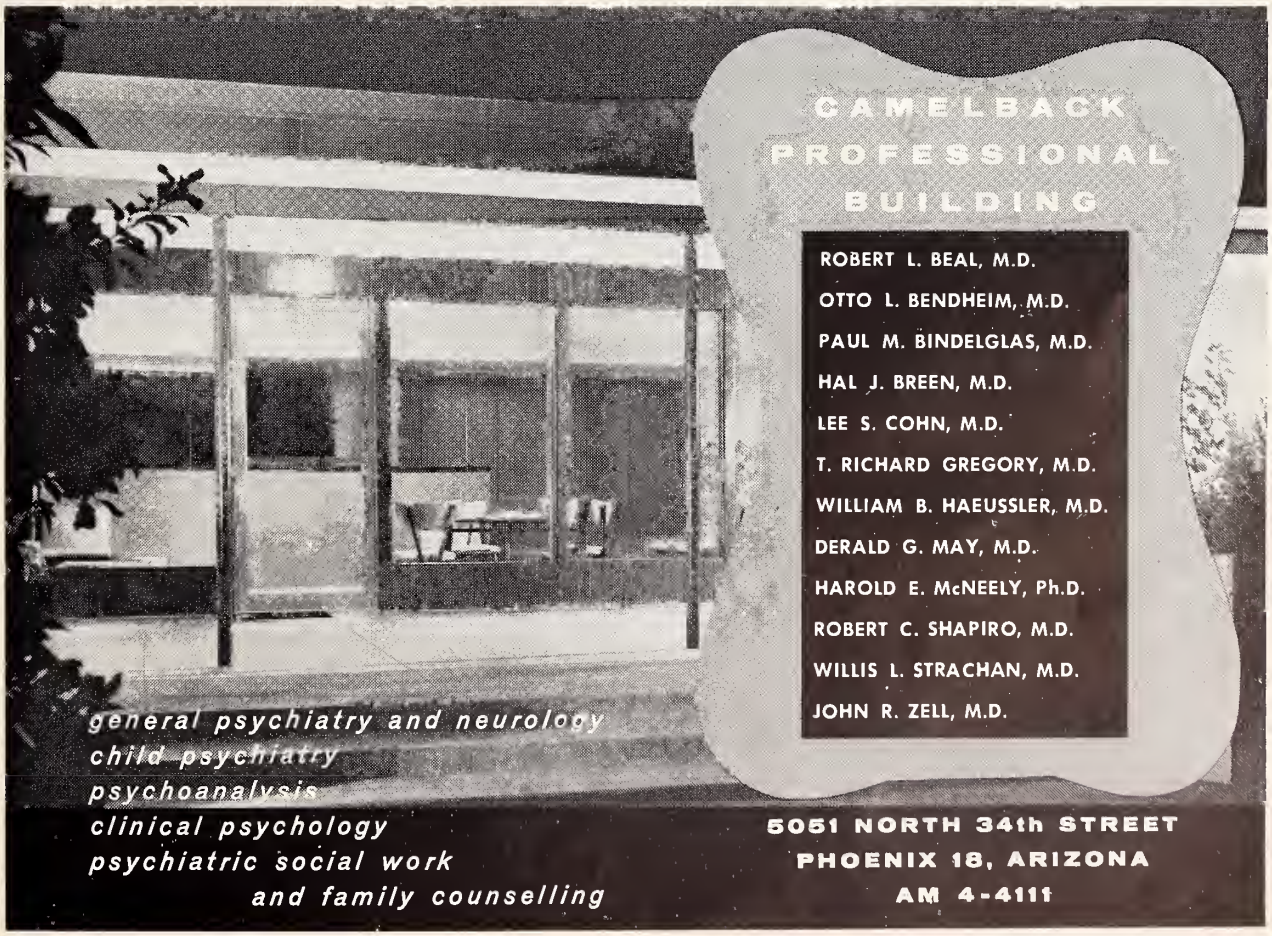
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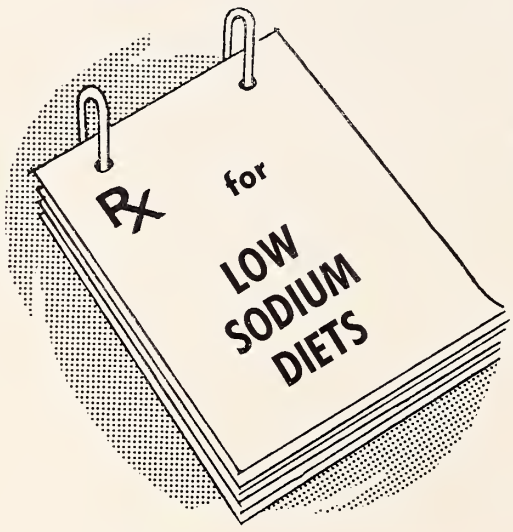
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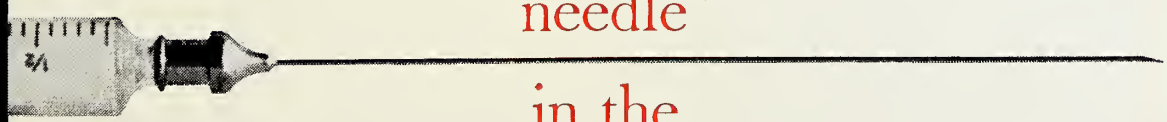
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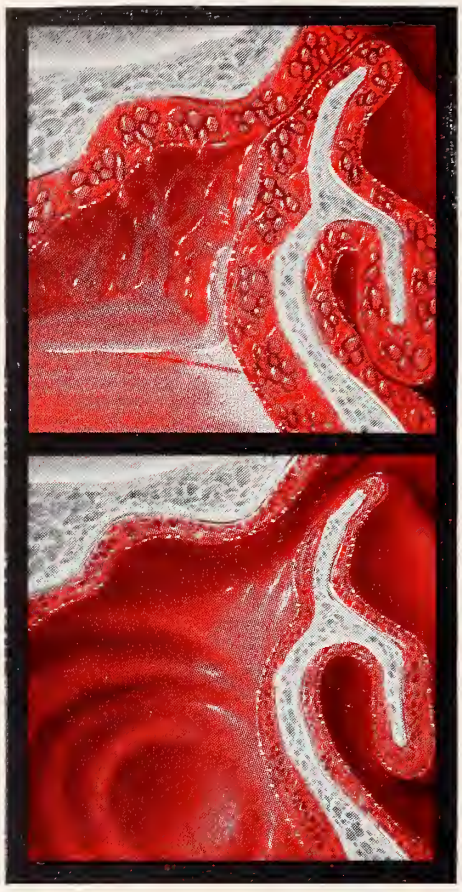
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1. Grant, L. E.: Coryza and nasal sinus infections, **Clin. Med. & Surg.** 42:121, March, 1935. 2. Putney, F. J.: Sinus infection, in Conn, H. F. (Ed.): Current Therapy 1952, Philadelphia, W. B. Saunders Company, 1952, p. 110. 3. Simonton, K. M.: Current treatment of sinusitis, **Journal-Lancet** 79:535, Dec., 1959.

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Arizona Medicine
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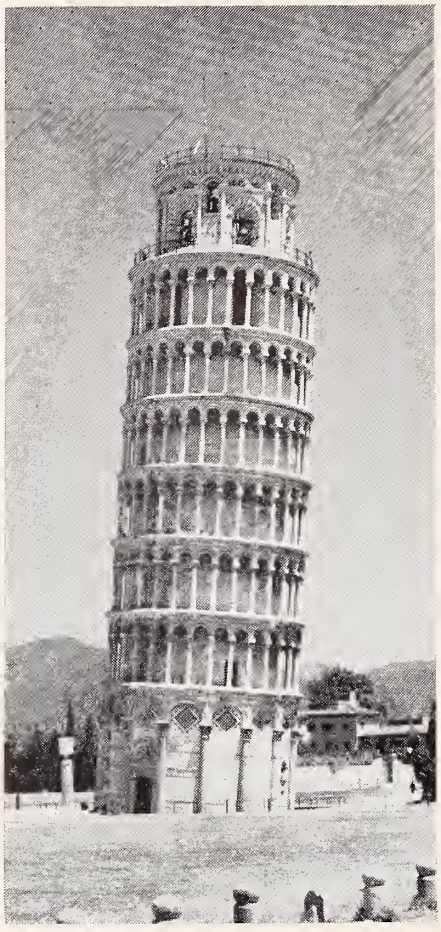
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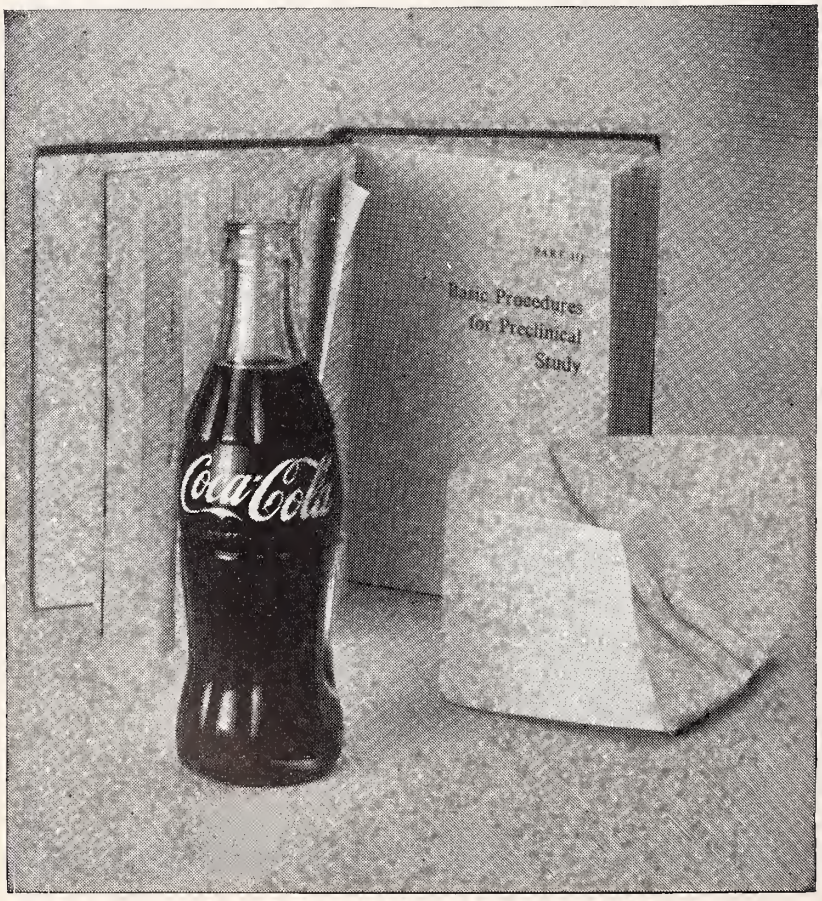
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1. **Methyl-Testosterone-Thyroid in Treating Impotence, A. S. Titeff, General Practice, Vol. 25, No. 2, February, 1962, pp 6-8.**
2. **Thyroid-Androgen Relations, L. Hellman, et al., The Jrl. of Clin. Endocrinology and Metabolism, August 1959.**

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1. Kolodny, A.L.: Dis. Nerv. System *22*:151 (Mar.) 1961.

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Study involving 287 patients. 261 patients experienced excellent to good results with Bonadoxin for relief of nausea and vomiting of pregnancy. No side effects reported.[1]

2. Albertson, H.A., Trout, Jr., H.H., Daily, F.W.: The American Journal of Surgery (Sept.) 1956.
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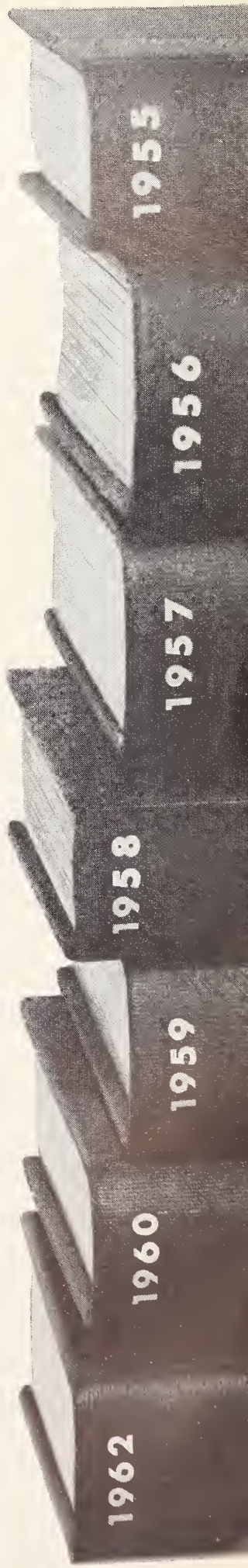
3. Goldsmith, J.W.: Minn. Med. (Feb.) 1957.
Study involving 620 patients, 537 patients experienced moderate to complete improvement of nausea and vomiting of pregnancy with Bonadoxin. Toxicity and intolerance to the medication in the dosage employed in these studies was zero.[3]

4. Codling, J.W.; Lowden, R.J.: Northwest Med. (March) 1958.
Study involving 76 pregnant patients with nausea and vomiting. The results indicated an overall response in 70 of 76 patients treated. No side reactions were observed in this clinical study.[4]

5. Bentley, M.D.: Journal of the Mich. State Med. Soc. (Sept.) 1959.
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6. Bethea, R.C.: International Record of Med. (May) 1960.
"Our investigation of this drug indicates that in 88 per cent of the cases satisfactory relief of the distressing symptoms of early pregnancy was obtained without undesirable side effects, including sedation."[6]

7. Sklaroff, D.M.; Karayannis, N.: Current Therapeutic Research (June) 1962.
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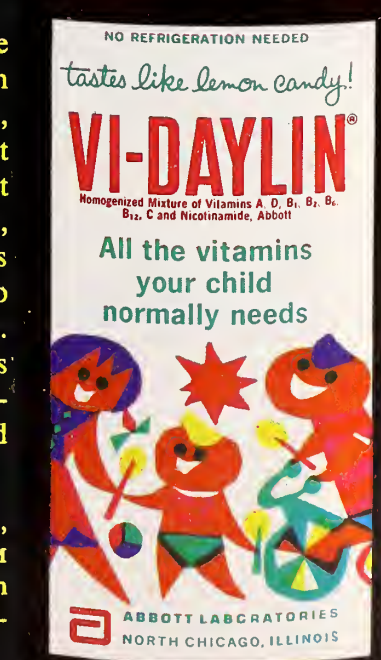
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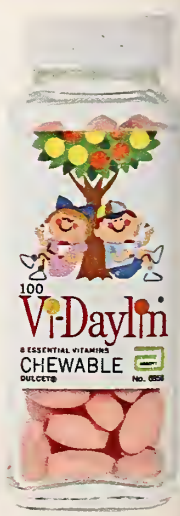
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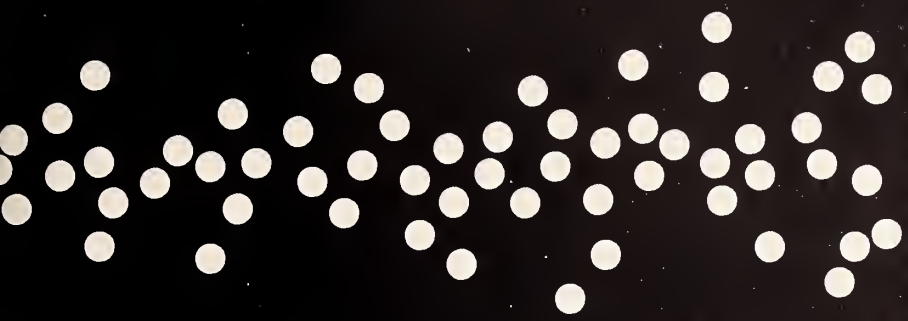
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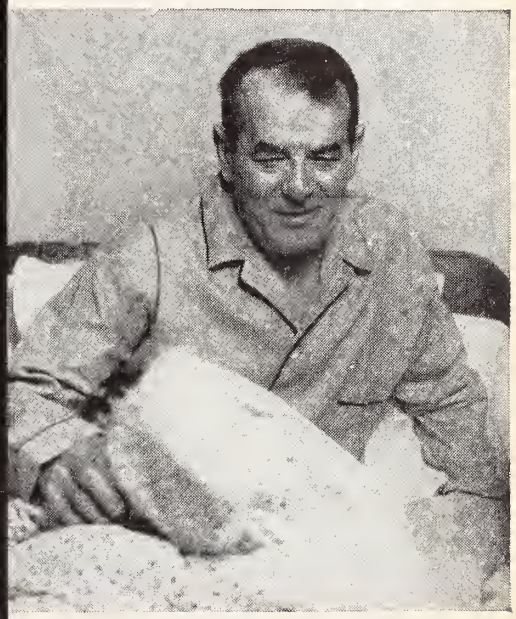


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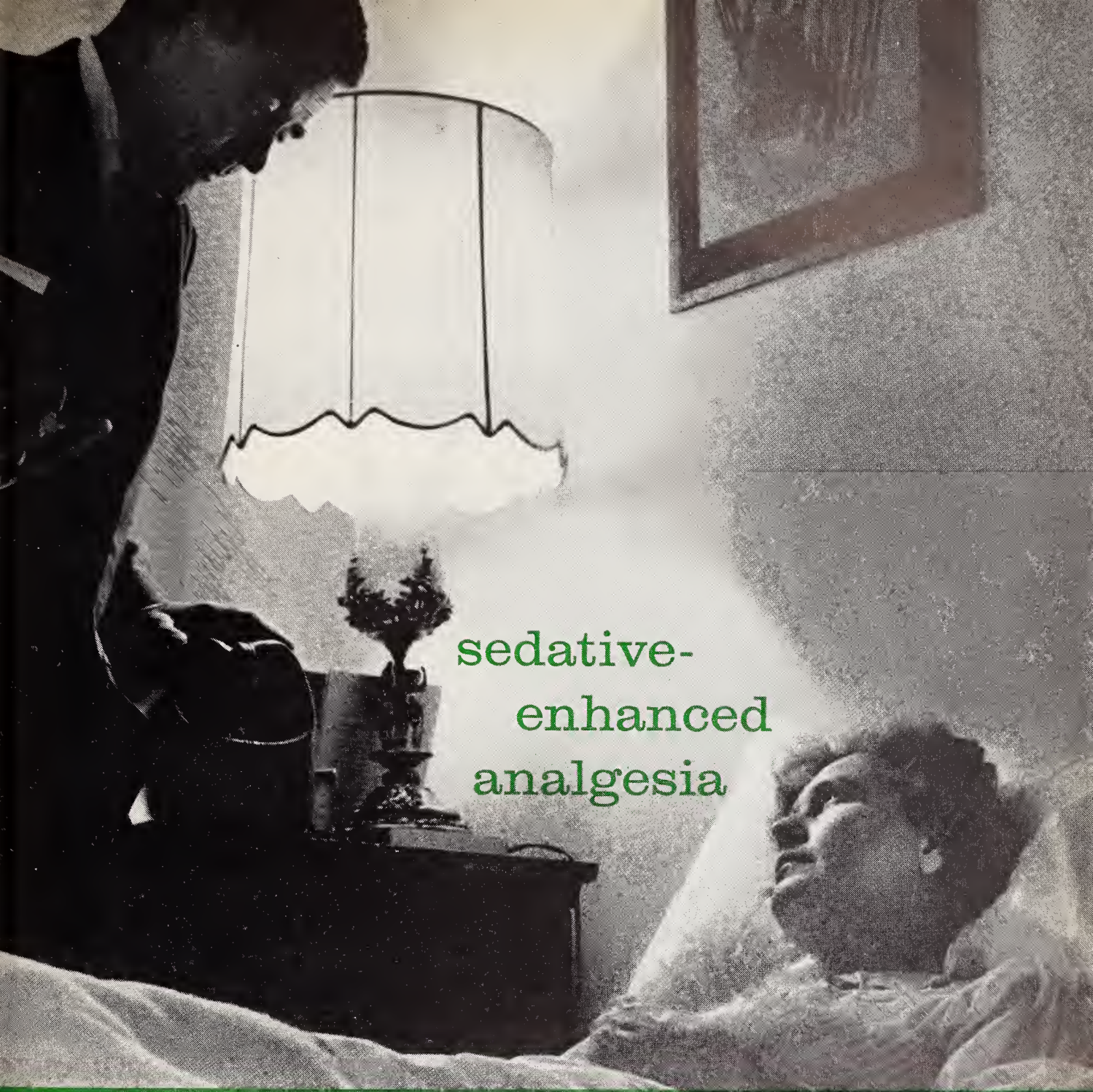
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LEGISLATIVE COMMITTEE
1961-62 Annual Report

The Legislative Committee met January 14, 1962 and considered measures introduced or anticipated to be introduced into the second regular session of the 25th Legislature of the State of Arizona. Items referred to it by the Board of Directors of the association were considered.

Resume of Business Discussed

1. Chapter IV, A.R.S., 1956, Basic Science Certificates

In line with the breakdown in the basic science testing of applicants for certification in Arizona, it was proposed that the statute be amended to provide certification on passing of an examination given in the basic sciences by a basic science board of a state or territory of the United States. The requirements for such examination were to be deemed by the board to be equivalent at the time of such examination to the requirements of this state at the time of the application for reciprocal endorsement.

The current practice of the Arizona State Board of Examiners in the Basic Sciences to consider partial reciprocity was discussed. The current statute does not provide this. Therefore it was considered advisable to amend the law to give authority to such practice. The committee recommended to the Board of Directors preparation of an adequate measure to accomplish the objectives. It is anticipated that an appropriate bill will be drafted and introduced into the first regular session of the 26th Legislature of the State of Arizona.

2. House of Delegates Resolution No. 2. Retirement Plan for Self Employed

This resolution adopted April 28, 1961, reaffirmed its support for Keogh-Simpson tax legislation to provide for a retirement plan of the self employed including physicians, nurses and other segments of the medical profession.

Counsel had proceeded with review of a suggestion of the Law Department of AMA providing for "professional corporation" within the states. The Board of Directors, in meeting December 10, 1961, determined that no further action be taken by counsel in this regard leading up to the preparation of an appropriate bill for introduction into the second regular session of the Legislature of the State of Arizona.

The Medical Economics Committee, in meeting held December 18, 1961, reviewed the proposal and strongly recommended to the Board of Directors that every avenue be investigated to the end that such measure (professional corporation legislation) be introduced and enacted by the state legislature in line with the proposed draft of measure or model state law originating out of the offices of AMA. It is the belief that such measure could accomplish the objective of H. R. 10 or any similar bill enacted by congress. Several of the states have already enacted such legislation. And unless and until the Bureau of Internal Revenue rules adversely, it appears to be the most favorable method of acquiring tax equality for physicians.

While the association did not direct the introduction of the proposed measure, certain of the physicians of the state determined to sponsor the introduction of a professional corporation statute.

S. B. 185 was introduced February 22, 1962, an act relating to professional corporations, authorizing the formation of professional corporations, preserving professional relationship and responsibility, etc. A similar measure, H. B. 287, was introduced into the house, February 22, 1962. The measure was passed by both the house and senate and signed by the governor. With the emergency clause included, its provisions become immediately operative with the filing of the bill with the Secretary of State (on or about March 20, 1962).

3. P. L. 86-778 — Kerr-Mills Legislation

The Legislative Committee, in line with action of the House of Delegates in Annual Meeting held in 1961, recommended implementation of this legislation.

Considerable effort was made by the association through 1961 to encourage the Arizona State Welfare Board to implement the federal statute and introduce an appropriate measure to accomplish the objective. A proposal was developed and offered by the "Blue Plans" intended to provide the essential services at $12 per person per month. The effort failed to achieve the desired results, principally because the federal statute did not place a limitation upon residency requirements.

While both this committee and the Board of Directors determined to take whatever action might be deemed essential to implement the Kerr-Mills Act under the direction of the Arizona State Welfare Board, the effort failed. It is planned to continue activity in the hope that the 26th State Legislature will be more receptive and the association successful in implementing this federal legislation.

4. S.B. 102 Re Atomic Energy

This bill creating the Arizona Atomic Energy Commission and prescribing its powers and duties, prescribing for the licensing and regulation of users and possessors of sources of ionizing radiation, etc., was introduced into the senate January 31, 1962.

In general, this measure duplicates the effort of the first regular session at which time S.B. 51 (January 25, 1961) and H.B. 91 (January 31, 1961) were introduced. While the governor in 1961 recommended enactment of this legislation, it failed passage. Again in 1962 S.B. 102 had the support of the governor and also the support of this association. It passed the senate and was forwarded to the house March 8, 1962. Failed.

5. Taxes on Medical Items

Resolution No. 11 introduced by the Maricopa County Medical Society into the House of Delegates in April, 1961 called upon the association to go on record as supporting the repeal or elimination of all local taxes and national taxes on prosthetics and other medical items necessary in the adequate health care of the citizenry.

It was felt action on this type of legislation would be inadvisable. The house supported this contention. And again the Legislation Committee determined that the subject should not be taken up at this time.

H.B. 43 and H.B. 115 were introduced January 11 and January 24, 1962, respectively, providing for the exemption from payment of sales tax on the sale of

medicines. Neither measure cleared the house.

6. Animal Vivisection

Resolution No. 14, adopted by the House of Delegates of this Association, April 28, 1961, expressed opposition to all legislation on animal experimentation associate with antivivisection. The Legislative Committee was not called upon to take any specific action in this regard so far this year. No measure was introduced during the legislative session recently concluded.

7. S.B. 208 Re Professions and Occupations

This act relating to professions and occupations providing qualifications of professional nurses, prescribing grounds for denial, revocation or suspension, providing for investigation of complaints and hearings, was introduced February 27, 1962. This bill, considered regulatory, set forth certain amendments supported by both the registered and practical nurses primarily dealing with the latter group. Enacted into law.

8. Air Pollution and Control

H.B. 7 introduced January 9, 1962; H.B. 130 introduced January 26, 1962; H.B. 221 introduced February 9, 1962; H.B. 301 introduced February 26, 1962; and S.B. 243 introduced March 7, 1962, each on air pollution and control were before the legislature for consideration.

H.B. 7, an act relating to public health and safety, authorizing the State Department of Health to study air pollution problems and to accept grants of monies, creating county control boards to study air pollution problems, etc., passed both the house and senate and was enacted into law.

9. Civil Commitment and Medical-Psychiatric Evaluation

In line with study and resolution of the ad hoc Narcotics Study Committee of the association, amendments were recommended to the statute enacted last year dealing with civil commitment and medical-psychiatric evaluation. Supported by this association.

H.B. 321, an act relating to public health and safety, prescribing mandatory requirements and conditions of probation, providing that the state hospital may provide care and treatment by order of the court or under voluntary commitment, etc., passed the house but failed of enactment. This measure included the provisions recommended and supported by the association.

10. S.B. 50 Re Osteopathic Licensing Statute

S.B. 50, an act relating to professions and occupations dealing with administration of the osteopathic licensing statute was submitted for review. Nothing objectionable was observed contained therein. No action taken. It passed the senate but failed of enactment.

11. H.B. 208 Re Public Health and Safety

H.B. 208, an act relating to public health and safety, defining the service of procurement, processing, distribution and use of whole blood, plasma, blood products and blood derivatives for use in the human body and declaring this to be the rendering of a service was supported by the Southwest Blood Banks, Pima County Medical Society, and this association, but failed.

12. S.B. 237 Re Certification of Psychologists

S.B. 237, an act relating to professions and occupations, providing for the establishment of a state examining board in psychology, requiring certification of psychologists, approved by the association but failed.

13. S.B. 186 Re Minors

S.B. 186, an act relating to minors, authorizing emancipated minors to secure hospital, medical and surgical care, proposed by the Arizona Hospital Association with the support of this association was enacted into law.

14. Arizona State Board of Health Bills

A number of bills were proposed for introduction by the Arizona State Board of Health. However none were submitted at the time of the committee meeting in a form to be presented in the legislature.

H.B. 68, an act making an appropriation of $450,000 to the State Department of Health for equipping and furnishing the tuberculosis sanatorium was enacted.

15. S.B. 2 On Aging

S.B. 2, an act relating to aging, creating a commissioner and advisory committee for the aging, prescribing powers and duties failed.

16. Care, Handling and Transportation of Injured

It was recommended to the Board of Directors that it endorse conclusions and recommendations made to the City-County Citizens Committee regarding ambulance service in this state, and that this matter be presented to the association's Safety Committee of the Professional Committee for action.

Legislative Proposals Considered by The Board of Directors February 4, 1962

I. S. B. 1552 (H. R. 6245) 87th Congress Kefauver-Celler Bill

This bill dealt with proposed amendment to the Anti-trust, Patent, and Food and Drug Laws with respect to the manufacture and distribution of drugs and was opposed by the National Pharmaceutical Manufacturers Association. Similar opposition by the association was expressed and component county medical societies were urged to adopt resolutions to this effect.

2. H. R. 4222 (87th Congress) King-Anderson Bill

This bill provided for payment of hospital services, skilled nursing home services, and home health services furnished to aged beneficiaries under the old-age, survivors, and disability insurance program (Social Security). The association determined to undertake a "crash program" designed to defeat enactment of this measure by the congress through establishment of an active speakers bureau intended to inform the public of the implications leading to the socialization of medicine, and also, to activate a resolution campaign with the assistance of the Woman's Auxiliary under its WHAM program.

3. H. B. 3

This bill providing compensation under certain conditions for "blisters and abrasions" which develop associate with occupational diseases and disability was disapproved by association. Failed.

4. H. B. 8

This bill provided for the establishment of a cancer advisory committee under the State Department of Health. No action taken. Measure failed.

5. H. B. 9

This bill appropriated $1,000,000 for medical college building fund for construction. No action. Failed.

6. H. B. 21

This bill prescribed method of reporting contagious diseases, and in the case of venereal disease prescribed that the person so afflicted might be referred to by an identifying number or symbol. Endorsed by association. Failed.

7. H.B. 22

This bill provided that physicians permanently employed by the State Department of Health, the state hospital, and state, county or municipal health departments be required to procure a license to practice medicine and surgery. Approved by association. Failed.

8. H.B. 24

This provided for the filling of prescriptions or the dispensing of medications under a different brand name or under its non-proprietary name with the permission of the prescribing physician when the cost therefor is charged to the state or any of its political subdivisions. Disapproved by association. Failed.

9. H.B. 69

Bill related to sale, distribution and labeling of hazardous substances for household use. Approved by association. Failed.

10. H.B. 79

Bill provided for admission of mentally deficient persons in the Arizona Children's Colony, relieving counties from payment of maintenance costs for mentally deficient persons admitted to the colony, the state to assume such costs. No action taken. Failed.

11. H.B. 81

Bill provided for registration with sheriff of sex offenders and provided penalty for indecent exposure. Approved by association. Failed.

12. H.B. 84

This bill provided Industrial Commission with authority to promulgate rules and regulations and establishment of a Division of Safety. Supported by association. Failed.

13. H.B. 89

Bill provided for regulation of hospitals, nursing homes, maternity homes and sheltered care homes. Supported by association. Enacted into law.

14. H.B. 90

This provided for the hospitalization and medical care of the medically indigent persons by the board of supervisors. Approved by the association. Failed.

15. H.B. 91

Bill provided for numerous amendments to the Welfare Code, the result of recommendations of the Legislature's Public Welfare Study Committee. No action taken. Enacted into law.

16. H.B. 108

Bill authorized the State Planning and Building Commission to select and secure a site for an intermediate training school for juveniles, at or near both Tucson and Phoenix, providing for the immediate construction of such a facility near Tucson. Approved by the association. Failed.

17. H.J.M. 1

This joint memorial requesting the Congress of the United States to re-examine the law and regulations of the Social Security Act relating to welfare for the purpose of permitting each state to operate its own welfare program without burdensome restrictions was supported by association. Failed.

18. H.J.R. 1

This joint resolution authorizing the Legislative Council to undertake a research project involving an analysis of the welfare program, including a study of federal legislation relating to medical care of the aged and the medical programs in effect in other states (including the Kerr-Mills Act), was supported by the association. Failed.

19. S.B. 8

This provided authorization for construction, reconstruction, maintenance and repair of air raid shelters. Action by association deferred pending report of its Professional Committee Subcommittee on Civil Defense. Failed.

20. S.B. 54

Bill provided for removal from jurisdiction of the State Department of Health the state sanatorium; providing for the establishment of an Arizona state tuberculosis sanatorium board, etc. Disapproved by association because of lack of specification of designated sources of procurement of physician members to be appointed to board. Failed.

21. S.C.R. 7

Bill prescribed that the examination relating to marriage shall be made not more than 30 days prior to the issuance of the marriage license which would delete the forty-eight hour waiting period. No action taken by the association. Failed.

22. S.J.M. 2

This joint memorial requesting the Congress of the United States to propose an amendment to repeal the Sixteenth Article of Amendments to the Constitution of the United States and prohibiting the Government of the United States from engaging in any business, professional, commercial, financial or industrial enterprise except as specified in the Constitution of the United States was supported by the association. Failed.

Other measures introduced in the senate and house of the 25th State Legislature, Second Regular Session, of particular interest to medicine and on which no specific official action was taken by the association, are listed below with results noted in each instance:

S.B. 48, making a $200,000 appropriation to the Board of Regents of the Universities and State College of Arizona for the purpose of establishing a medical college in the Salt River Valley. Failed.

S.B. 52, making a $200,000 appropriation to the Board of Regents of the Universities and State College of Arizona for the purpose of establishing a medical college in Tucson. Failed.

S.B. 64, relating to employment security; enabling an employer to obtain a reduced contribution rate after one year of chargeability; deleting special rate computations; defining computation rate and average annual payroll, etc. Enacted into law.

S.B. 138, relating to optometry; defining unprofessional conduct; prescribing powers and duties of board; etc., Enacted into law.

S.B. 139, relating to narcotics; providing for enforcement of laws relating to narcotics by the Superintendent of Liquor Licenses and Control; providing for administration of license provisions of such laws by the State Department of Health; etc. Enacted into law.

S.B. 154, prescribing qualifications of practical nurse; etc. Failed.

S.B. 180, providing an additional income tax exemption of $1,000 for persons 65 years of age or over; etc. Enacted into law.

S.B. 220, relating to corporations; providing for annual reports to be filed and fees to be paid by non-profit corporations, etc. Enacted into law. This measure is designed to afford relief to the many non-profit organizations not heretofore filing annual reports with the Corporation Commissioner for lack of knowledge of such necessity.

H.B. 4, relating to welfare, prescribing quarterly report required of all recipients of assistance; etc. Failed.

H.B. 51, providing for safety seat belts on all new automobiles; etc. Failed.

H.B. 59, establishing a division or unit of blind services within the state department of public welfare, etc. Failed.

H.B. 73, providing that special program for education of students afflicted with partial or total blindness, deafness or defective speech, etc. Failed.

H.B. 137, removing the repayment provisions from the Western Regional Compact for Higher Education; etc. Failed.

H.B. 156 (same as S.B. 64, previously reported). Failed.

H.B. 160, prescribing exemptions to the transaction privilege taxes on tangible personal property purchased in this state by any hospital, etc. Failed.

H.B. 181, amending sections of the occupational disease and disability act. Failed.

H.B. 183, relating to the Arizona Children's Colony; authorizing construction of new branches at Phoenix and Tucson; etc. Failed.

H.B. 200, creating the Arizona Department and Commission for the blind, etc. Failed.

H.B. 209, relating to optometry; defining unprofessional conduct; fees and disposition; reinstating license; revocation of license; etc. Failed.

H.B. 231, granting authority to school districts to provide programs for trainable retarded children; etc. Enacted into law.

H.B. 252, providing that the Western Interstate Commission for Higher Education endeavor to provide adequate services and facilities in fields of osteopathy, chiropractic and naturopathy; etc. Failed.

H.B. 253, relating to chiropody; providing for reciprocal licenses; etc., eliminating discretion and examination. Failed.

H.B. 269, prescribing requirements for exhaust systems on motor vehicles. Failed.

H.B. 326, empowering and directing the Arizona State Hospital Board to convey by deed certain lands in Maricopa County to the Board of Regents of the Universities and State College for construction of a state medical college thereon. Failed.

Introduced in this second regular session of the 25th State Legislature were 243 bills in the Senate, 334 in the House, and many memorials and resolutions. Each was reviewed. Those dealing with health, welfare and safety were thoroughly examined and evaluated. With the ever-increasing legislative activity, it appears more frequent meetings will be required to be scheduled and held during a legislative session, both on the part of this committee and the Board of Directors.

Dissipation of one's strength and influence in matters legislative should be avoided under any circumstance. The association is being called upon more frequently by allied groups or individuals to gain its support and muster its influence in their interest. While most certainly it will be found to the advantage of the medical profession, in specific instances, to lend such support, it does not appear wise to extend it too freely for whatever cause. This should be given serious consideration in the months ahead.

The association's prestige has gained the respect of past legislatures and its influence has been felt. Should we not keep it that way and avoid dissipation of our strength?

McDonald Wood, M.D.
Chairman
Legislative Committee

ANNUAL REPORT OF THE SECRETARY 1961-62

The total gain in membership of this association between April 1, 1961 and April 1, 1962 was 4 members. This does not take into consideration the 64 delinquents as of April 1, 1962.

(*Continued on following Page*)

(Secretary's Report — Continued)

Membership by county as of April 1, 1962 was:

County	Changes	Total
Apache	3	8
Cochise	—3	23
Coconino	5	26
Gila	0	21
Graham	0	6
Greenlee	—2	5
Maricopa	13	649
Mohave	1	3
Navajo	0	7
Pima	—7	287
Pinal	—2	24
Santa Cruz	1	9
Yavapai	—2	18
Yuma	—3	30

The 1,116 total membership is comprised as follows:

Active	1,017	(includes 50 Year Club members)
Service	37	
Associate	61	
Affiliate	1	

The breakdown of the 64 delinquent former members by county is:

Chochise	1
Greenlee	1
Maricopa	36
Navajo	1
Pima	17
Pinal	4
Santa Cruz	1
Yavapai	1
Yuma	2

I have attended all meetings of the Executive Committee and the Board of Directors, and have attended as many of the special meetings as was possible during the year 1961-62. I attended the AMA meeting in New York in June, 1961.

I had no work to do in the actual secretarial role as Mr. Robert Carpenter and Mr. Paul R. Boykin supervised the taking of minutes and their transcription. I approved payment of bills as was indicated, signed all necessary forms, and permitted the central office to use a rubber stamp of my signature for all routine correspondence.

Role of Secretary

The primary role of secretary of ARMA is to peruse the voluminous correspondence in association with the central office personnel and to dispose of as much as possible by direct reply without troubling the Executive Committee. Problems that are beyond the purview of the secretary should be referred to the president and further action should be initiated by him. This method, I believe, would greatly reduce the work load in the central office.

The secondary role of the secretary is the direct supervision of the Central Office, which was not required of me this year.

Suggestions and Observations:

During this year I learned a great deal about the workings of ARMA. I would like to add my suggestions and observations. I would like to preface this by saying that I have had an active role in medical politics on a county or state or Blue Shield level for the past 15 years.

The functions of ARMA have increased tremendously in the past ten years. A lot of this could dispense with, without at all affecting our effective organization. There is a constant pressure on us from the AMA in Chicago. We are constantly badgered and goaded into taking part in national problems that properly belong to the AMA. If we followed out their requests for someone from here to attend all the special and regular sessions and briefings and indoctrinations, Bob Carpenter would be gone 99% of the year, plus other officials of the organization. We spend about $3,000 to $4,000 on this each year. Some of this could be curtailed and saved.

A lot of work could be saved, and a lot of effort reduced without impairment of our overall function by not doing non-medical projects. I feel that civil defense is the job of the State Civil Defense Department, not that of ARMA. I feel that smog and water pollution control belong to the State Department of Health. I feel that we should have interested doctors as advisors to these areas, but that to expect the central office to handle the work and the correspondence and for the membership to pay for it is not justified, no matter how good the project is.

There are too many subcommittees and committees that are pulling every which way. A lot of these could be done away with and one interested person could take over.

For years we had one or two men peruse the bills that went into the state legislature and only those bills that directly affected us were considered worthy of concerted action. We should not have to interfere as to where the boy's colony will be located. If the psychiatrists are interested in a mental health bill, this could be the job of the state psychiatric association, not that of ARMA. We do not have the personnel for it. Although there has been a directive, that the central office personnel are not to do the typing and telephoning for the various subcommittees, this directive is consistently ignored by the subcommittee chiefs who expect a tremendous amount of personal work by the staff for all their assignments.

We have 17 committees and innumerable subcommittees. We had one and a half persons in our employ 10 years ago; we now have 7. And still there is need for many more if all the chores expected of them are to be done — an utter impossibility.

We are living beyond our means both physically and financially. We cannot possibly provide the national coverage that for example California provides. We still have an overall membership smaller than San Diego County.

We must retrench in our capacities and finances. We can do this without in any way curtailing the really essential functions that are the proper role of this medical association.

Paul L. Singer, M.D.
Secretary

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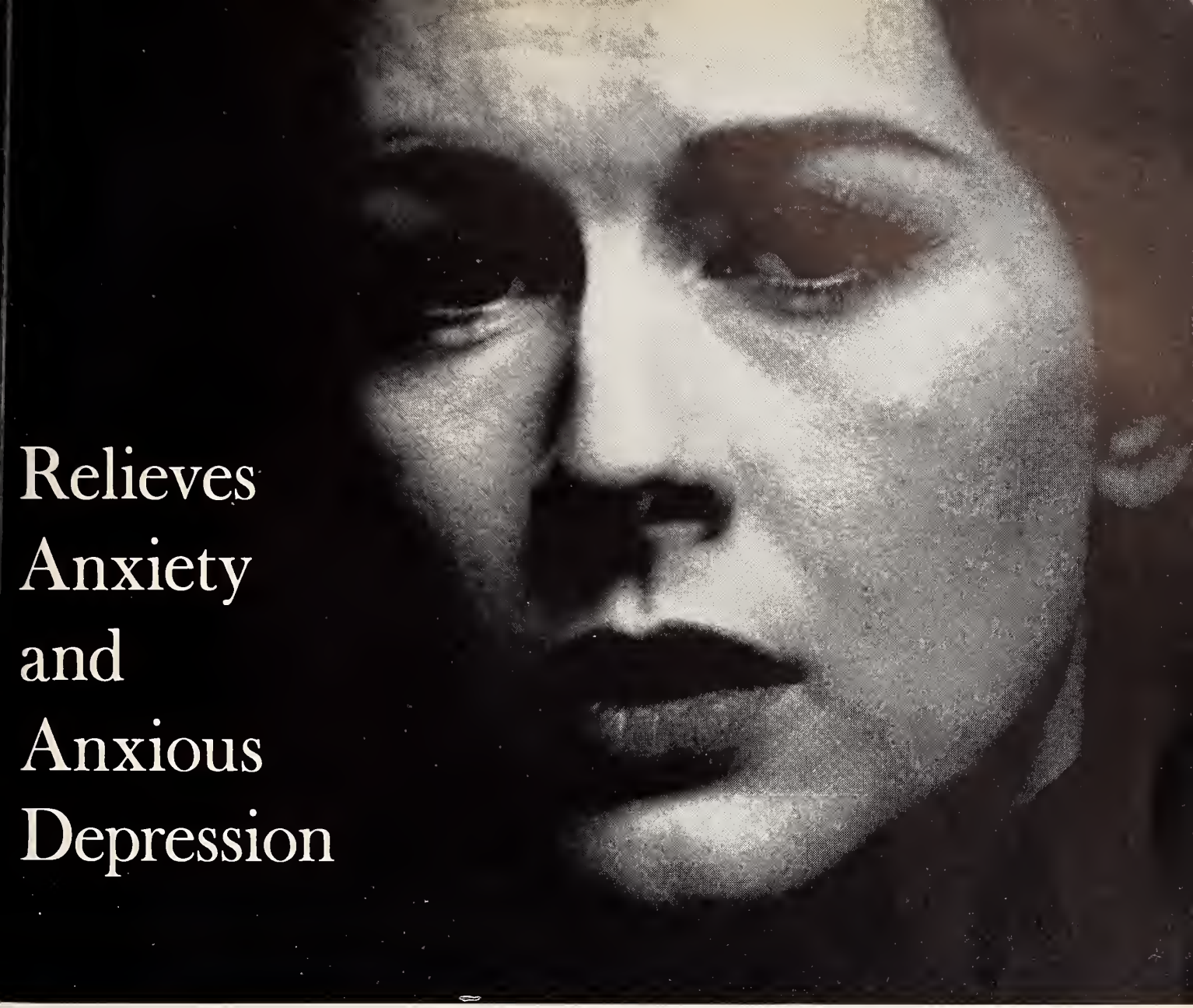
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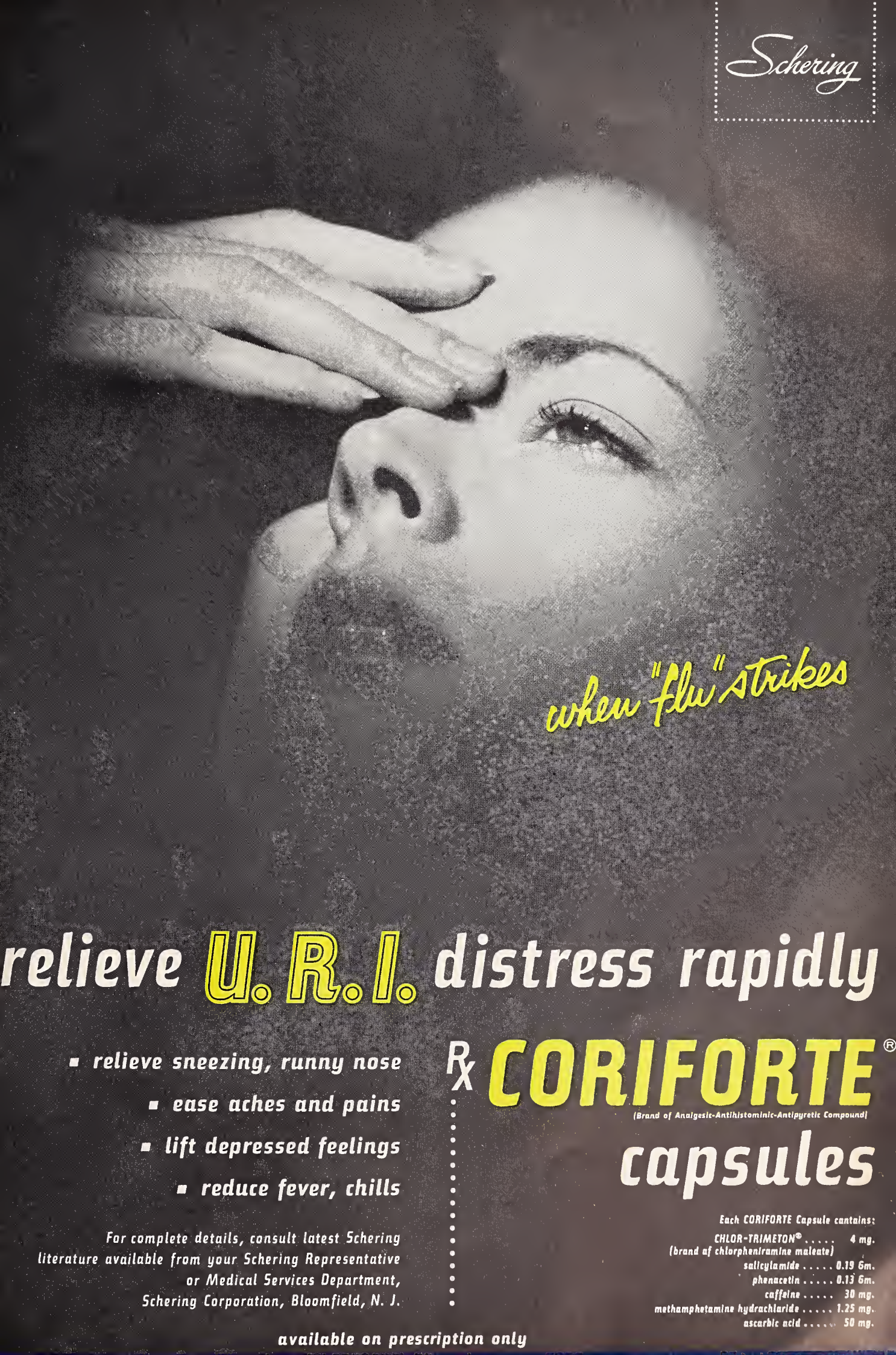
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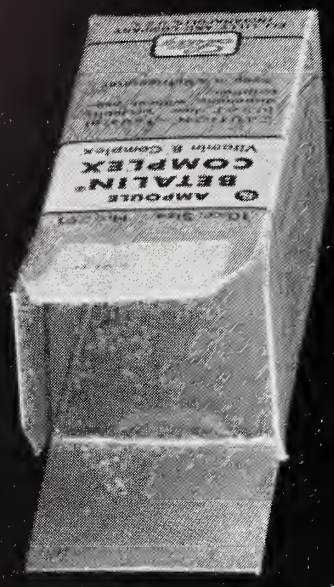
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Dr. Gluck

Essential Hypertension

Martin Gluck, M.D.

Pathogenesis of so-called essential hypertension is still obscure. The author discusses the evolution of the knowledge of the disturbed physiologic mechanisms in this disease. A brief comment regarding treatment concludes the paper.

WHEN in 1923 my chief, Friedrich von Mueller, discussed hypertension at the University Clinic in Munich in the presence of many American doctors, he believed that in the last analysis the cause for hypertension would lie in the kidney.

This viewpoint was acknowledged by most clinicians of this era. Goldblatt's work later also seemed to confirm the view that the kidney was the one and only cause for essential hypertension.

In later years, the nervous system, the adrenal glands and finally the intrinsic properties of the blood vessels were said to be responsible.

In Tuebingen in 1925, Ottfried-Mueller demonstrated changes in the capillaries of the fingernail bed, postulating the presence of a general capillaritis in nephritis that finally led to a decrease of the capillary bed, thus producing hypertension. This led to the concept of hypertension as a syndrome rather than a disease.

As a resident in internal medicine, I was taught that high blood pressure was a compensatory mechanism that should not be disturbed. Clinical experience shows us that our hypertensive patients sometimes feel better and peppier with their blood pressure high than when for some reason it drops to lower levels.

A study of the literature is convincing that the answer to the problem lies in the capillaries which are intimately connected with tissue perfusion and tissue pressure and which probably are the main components of the system that determines the need of individual organs for blood. And arterial blood pressure certainly is one of the most important components of this functional system.

We know that if blood volume changes, neurogenic vasomotor tone changes to keep the blood pressure at a constant level.

Factors to Consider

There are other factors dominating tissue perfusion, such as cardiac output, blood viscosity, chemical blood substances and the vascular caliber itself. Therefore it seems very unlikely that all types of hypertension could be explained by one pathological mechanism. In future years we shall probably know more about the blood distribution through our investigations of the cardiovascular responses to weightlessness in outer space.

The most popular theory supports the secretion of a pressure substance in the kidneys that raises the blood pressure. This will be discussed later.

Much accumulating evidence in the past few years considers hypertension a result of change in the electrolyte and enzyme content of the blood vessels, especially the salt-water metabolism in the blood vessel wall, mediated chiefly by the adrenocortical hormones.

Selye enlightened us with his demonstration of hypertension in rats, elicited by unilateral nephrectomy, salt and desoxycorticosterone ad-

446 North Norton Avenue, Tucson, Arizona.
Read at Tucson Medical Center, Tucson, Arizona on December 15, 1961.

ministration. Most clinicians today believe that salt has something to do with hypertension.

Some investigators found that analysis of blood vessels demonstrated a relationship between high blood pressure and sodium content. The newly found adrenocortical steroids were a great theoretical attraction for many investigators. And much was written of excess secretion of aldosterone from the adrenal glands in hypertension.

But hypersecretion of aldosterone was by no means a constant finding. Indeed, the highest values of aldosterone were found in cases with liver disease and nephrosis in which hypertension was not present. Other investigators found aldosterone secretion significantly increased in cases of renal or vascular complication, whereas normal values were found in essential hypertension.

Cohnheim and Achoff

Cohnheim and my teacher Achoff postulated that thickening of the blood vessel wall preceded the hypertension. In the line of new investigations are those who see the causes of peripheral resistance mainly biophysically on the basis of swelling and overgrowth of the arteriolar wall and on inherent physical properties of vascular muscle as a result of electrolyte changes.

There is no doubt that the distending force of the blood pressure creates in the smooth muscle a tendency to rebound, thus inducing some degree of vascular tone.

Probably all those factors which I have enumerated are involved in what we call hypertension. Of special importance clinically are the structural vascular changes in brain, myocardium, in kidneys and also the endocrine glands.

It seems clear that blood flow to an organ can influence systemic blood pressure to an important degree and that the local need for blood is one of the critical determinants of systemic blood pressure.

The neurogenic component is by no means clear. We all know that pressure on the carotid sinus area elicits the same circulatory response in hypertensive as in normotensive patients. The sinus mechanism, one of the most powerful modulators of blood pressure levels, seems to fail. It was postulated by Page and his coworkers that the carotid sinus buffer mechanism has shifted its threshold and range of response upward so that it perceives the hypertensive levels as normal ones.

The carotid sinus mechanism is only one of several neural mechanisms to control blood pressure in a discriminating fashion. Serotonin, this rather intriguing pressure material coming from the stimulated brain and probably acting as a neurotransmitter substance, is another example of the close integration between humoral mechanisms and neurogenic changes.

The neurohypophysis is another great regulator, principally through its vaso-pressure activity. The vasoconstricting effect of vasopressin seems to be based on the ability of the hormone to transfer sodium across the vascular smooth muscle cell mebrane.

In 1960 Manning and Heiss, in the "American Journal of Physiology," and before that, Hess, in Zurich, showed the importance of the role of the hypothalamus. In 1959 some Swedish investigator found a restricted hypothalamic area also in a cat, stimulation of which caused inhibition of sympathetic vasomotor activity.

Unfortunately, we cannot go more extensively into this fascinating problem. Suffice it to say that the nervous control of blood pressure is a highly complex one. But control of tissue perfusion is regulated both by blood pressure and chemical sensing elements of the nervous system, and also by direct liberation of vasoactive agents in the juxtaglomerular apparatus, the adrenal medulla and the pituitary gland.

There is a controversy on whether widespread vascular disease precedes hypertension in human beings, (Goldblatt) or whether hypertension causes vascular disease, which in turn leads to intrarenal hemodynamic changes causing hypertension followed by reduction in blood flow.

Angiotensin and Renin

Angiotensin (angiotonin, hypertensin) was discovered some 20 years ago. And we still do not know much about its function in hypertension although it seems to be a key substance in the mechanism of hypertension. The same is true of the proteolytic enzyme renin, which already was discovered in 1898 by Tigerstedt and Bergman and about whose exact distribution in the kidneys we are still ignorant.

This problem became more important through the discovery of antirenin-antibodies by Wakerlin. His work was received skeptically but completely confirmed by Goldblatt. Whether it will

be possible to treat hypertension or determine its mechanism by immune methods remains a fascinating research problem for the coming years.

Theory of Kidney Participation

Braun Menendez in 1952 proposed the presence of a trophic substance in the blood which the kidney eliminates and called it renotrophin. He established a working theory for increased production of this substance and enlargement of the kidneys and its function until a new equilibrium is reached between production and elimination of renotrophin. Hypertension would occur when the remaining renal tissue was unable to respond to the stimulus of renotrophin present in the blood.

Thus, the importance of the participation of the kidneys is still recognized as number one factor.

The role of the nervous system is also much clearer in the pathogenetic foreground. The participation of the endocrine system is still a vexing one and the importance of salt is still not completely resolved. Enzymatic and antibody participation needs much more enlightening work to be clinically helpful. And so we must conclude that there apparently is no single mechanism responsible for the pathogenesis of this interesting vascular syndrome called "essential hypertension."

When we talk about hypertension it is difficult to find a sharp diving line between normal and high blood pressure. To some people it is a purely arbitrary division and the blood pressure in the individual patient may fluctuate considerably.

There is also a very individual difference in the rise of blood pressure that occurs with advancing age. The question of heredity and environment makes me believe that essential hypertension represents a distinct clinical entity with a definite familial tendency. We all probably agree that the change towards diastolic hypertension most commonly occurs between 45 and 50 years of age and less commonly after this age. Thus, age is not the determining factor.

Clinically, we have to exclude such conditions as systolic hypertension secondary to arteriosclerosis, hyperthyroidism, coarctation of aorta, pheochromocytoma, adrenocortical tumors, arteriovenous fistula of the kidney, unilateral kidney disease, and chronic kidney disease. The residuum we call essential hypertension.

During the 20th century evidence has suggested possible relationship between salt ingestion and hypertension in man. As clinicians we observe daily that under ordinary circumstances the adaptive mechanisms of the body are so exquisitely effective in conserving salt that intakes of only one or two grams a day are more than sufficient for metabolic needs, including periods of growth, as shown by Dahl in England in 1958.

I have never seen evidence of salt craving in my patients whose salt intakes were drastically reduced for many months unless salt appetite was induced by well-meaning friends or articles in the lay press. Salt appetite exists, but it is rather acquired than innate. You recognize when you travel the American tourist who vigorously uses the salt shaker before tasting one bit of food.

Grollman and his associates were the first to demonstrate in 1940 that various sterols were hypertensogenic *only* if additional salt was provided. Long term experiments over the last two decades have confirmed the potential of chronic salt feeding to produce hypertension. There also seems to be evidence that both incidence and severity of hypertension will be increased if the amount of ingested daily salt is increased. In man, salt restriction has long been used as part of the therapeutic regimen against established hypertension.

Grollman in 1945 demonstrated that the important substance was sodium and not chloride. Widespread acceptance of this fact came especially after the recent development of effective, relatively non-toxic natruretic agents such as chlorothiazide. Here too, salt ingestion seems to modify the response, since a high salt diet appears to limit or even block the hypotensive response to chlorothiazide.

From the Mayo Clinic came reports that some diabetic children became hypertensive when salt was presented. Other reports in the literature confirm this observation on young adult males.

Geographical Factors

In Japan hypertension is a common disease. Average levels of salt intake are high and interestingly appear to decrease from North to South. And both the incidence of hypertension and the incidence of cerebral vascular accidents decrease from North to South. But there must also

be some individual susceptibility factor that explains these phenomena. One certainly cannot suggest that excessive salt intake is the cause of hypertension.

Since the original study of Farnsworth and Baker in 1943, we know that hypertensive patients acutely eliminate a greater portion of a salt and water load than do normotensive subjects. This renal abnormality is apparently due to an increased tubular rejection rather than to an augmented glomerular filtration of sodium chloride and water. This was also shown by Cottier in Berne, Switzerland.

Regulation of Excretion

There seems to be more and more evidence that the arterial blood pressure in the kidney is of great importance for the regulation of sodium chloride and water excretion, as long as glomerular filtration rate and renal plasma flow are not considerably reduced.

A differentiation between essential and arteriosclerotic hypertension is not possible, however, as the tubular rejection of sodium is similarly increased in essential and arteriosclerotic hypertensives. The same is true for renal hypertension as shown by comparison of patients with chronic glomerulonephritis and nephrosclerosis. Both showed an almost identical tubular rejection of sodium under isotonic and hypertonic saline infusions.

The assumption that arterial pressure plays an important part in renal handling of sodium chloride and water excretion was confirmed on clinical grounds. Any kind of hypotensive measures like drug therapy, nephrectomy, sympathectomy tends to reduce diuresis and natruresis (hydralazine so far seems to be an exception to this rule as glomerular filtration and diuresis are increased).

Lately, a lot of work has been done concerning adrenocorticoid function and renal pressure mechanisms. The work was mostly done on rats. The rat is much too obliging an animal; but there seems to be some similarity between the rat and the human in that the human becomes hypertensive when given high doses of corticoids if there is no salt restriction.

It also seems that by variation in the sodium uptake the content of renin in the kidney is changed in the same direction as the secretion of aldosterone. It appears that renin does not act directly on blood pressure but that it stimulates the zona glomerulosa of the adrenal gland, either directly or indirectly, to produce more aldosterone, which leads to an increased tubular absorption of sodium.

The role of renin in the pathogenesis of experimental hypertension therefore may not be on the basis of its direct activity on blood pressure but may rather be involved in sodium metabolism.

Peart in London injected renin enzyme in its purer form, angiotensin. He used synthetic valine 5-octapeptide by Ciba. In normotensives he got an antidiuretic effect and a decrease in electrolyte excretion and thought this effect to be due to vasoconstriction of greater degree in the kidneys. From a clinical pathological point of view the nearest anology to this situation is acute glomerulonephritis where glomerular filtration rate and tubular function are cut down markedly.

Kidney as Pressor Agent

The elaboration by the kidney of a pressor agent as we see it clinically in so-called unilateral renal disease cannot be denied. But there is no proof that we can attribute all hypertension to this unique form of blood pressure elevation. The consensus today seems to be that renal hypertension involves both extrarenal and renal factors.

Genest and his group in Canada studied the role of adrenocortical function in essential hypertension in normo-and hypertensive individuals and demonstrated direct evidence of a correlation between the aldosterone-secreting adrenal zona glomerulosa, sodium regulation and the renal juxtaglomerular apparatus responsible for the elaboration of renin or a renin-like substance.

They do not claim that the disturbance in aldosterone secretion in patients with hypertension of various origins is a basic etiological factor in this disease. But they report a small decrease in blood pressure by the use of progesterone which inhibits the sodium retaining effects of aldosterone in humans.

French investigators in Strasbourg confirmed the frequency of hyperaldosteronuria in hypertensive patients but noted considerable fluctuations under the same regimen in the same patients. They found that neither the clinical picture (blood pressure, renal exploration) nor

the biological data (potassemia, natremia, 17 keto-steroids) revealed any difference between the cases of hypertension with a high urinary output of aldosterone and the cases of hypertension with normal secretion of aldosterone.

Almost all investigators seem to agree that the hyperaldosteronism in hypertension must be considered in relation to certain anatomicopathological modifications in the adrenal, mostly of the hyperplastic type. Such changes as commonly seen in elderly individuals appear to be of some importance in the young hypertensive. And in this connection it is very significant to note that experiments have shown that hypertension of the Goldblatt type, like renin administration, produces similar abnormalities in the adrenal cortex.

It seems to be justifiable to say that in humans there is a highly specific and important relationship between the renal pressure mechanism and the zona glomerulosa secreting aldosterone.

There is no direct correlation between the amount of aldosterone and hypertension. That means that aldosterone has no specific effect on blood pressure but perhaps on blood volume. And so we are still searching for the mechanism by which redistribution of body water and/or sodium can affect the blood pressure.

We still know very little about the competitive or antagonistic action of the various steroid hormones or how corticoidogenesis affects the degree of diastolic hypertension.

Salt Restriction Therapy

The exact mechanism whereby sodium depletion produces its anti-hypertensive effect is not clear. There is ample evidence to indicate the effectiveness of this time-honored procedure when adequately applied to a certain proportion of patients. Although the availability of potent orally effective, relatively nontoxic natruretie drugs has made the use of more drastic sodium restriction unnecessary, a combination of moderate salt restriction with drug therapy is preferable to reliance on drug therapy alone.

Undesirable hyponatremic reactions like anorexia, nausea, headache, lassitude, muscle cramps, are rarely seen in uncomplicated cases of hypertension. Only in the presence of renal insufficiency with a propensity to wastage of sodium has hyponatremia with its attendant symptoms been encountered.

I shall not go into the symptomatology of benign hypertension. Besides, this disease is often symptomless, but sooner or later we find complaints of dizziness, functional dyspnea, palpitation, precordial pain and headaches.

There is usually a fairly good correlation between height of blood pressure and the size of the heart. But we also know that very often patients do not have an enlarged heart in spite of long-standing hypertension.

We further know that women can carry on remarkably well with high blood pressure in contrast to men. Only women with a history of toxemia of pregnancy show the same mortality rate as men with essential hypertension. Of course, when our patients develop organic changes in the brain, heart or kidneys, the prognosis is invariably bad.

The goal to protect our hypertensive patients against the development of serious vascular disease still seems far in spite of new hypertensive drugs.

Incidence Greater in Men

Malignant hypertension, as described by Volhard and Fahr, with its rapid progression towards a fatal outcome usually in azotemic coma, with its high and fixed systolic and diastolic blood pressure with the presence of papilledema and appreciable changes in renal function, is a well-known picture to all of us. The highest incidence is found in men. Age for both sexes is about 40.

The existence of previous benign hypertension has often been reported. Onset of the malignant phase with headaches, visual disturbances, nocturia, may be gradual or dramatically sudden. Sometimes it is precipitated by concomitant infections, pregnancy, or even physical, mental or emotional strain.

Neither the most exact study of the past history nor diligent inquiry into the family history reveal any distinctive factors to foresee the development of malignant hypertension. But the earlier we make the diagnosis and watch for it, the better we are able to help our patients. Because malignant hypertension now is much more accessible to treatment either by removing the cause, if you can find it, or by surgical or medical means.

To make the diagnosis as early as possible,

we should not rely on any one sign but should use our clinical judgment. The most important criteria are the severity and rapidity of the clinical course. I am sure that the height of the blood pressure is not indicative of malignant hypertension, for we all have seen alarmingly high blood pressure, particularly in women from 55 to 60, sustained over years without manifestations of malignant hypertension.

Symptoms Cited

Papilledema of course, should be regarded as a pathognomic sign of malignant hypertension. In all cases of chronic glomerular nephritis we should watch for the development of malignant hypertension.

We used in our clinic the specific gravity of urine as a pretty good measurement and started worrying when the concentrating power of the kidney did not go over 1012.

Nocturia also is a significant and rather early symptom to watch for. Most patients die of renal insufficiency and at autopsy we find arteriolar necrosis. But it is well to remember this as an *end-stage* of the underlying pathology, because renal biopsy performed at an early stage does not reveal any histological changes which would entitle the investigator either to diagnose or to exclude malignant hypertension.

The importance of aortography should be emphasized. This method should, in the view of our most recent knowledge, be absolutely used if malignant hypertension suddenly occurs to rule out the possibility of an arteriosclerotic plaque obstructing the renal circulation.

The significance of renal arteriography cannot be overemphasized because occlusive or stenotic lesions can be diagnosed and treated with nephrectomy, segmental nephrectomy, or bypass procedures with good results.

INDICATIONS

1. Young hypertensives.
2. Malignant hypertension.
3. Disparity of size or function shown by intravenous pyelogram.

The treatment with hypotensive drugs is still a controversial issue. The question arises whether to treat every case of essential hypertension or whether to confine the use of these drugs to patients with malignant hypertension or severe benign or renal hypertension.

It is difficult to treat and assay a patient when symptoms are few or absent. Besides, supervision of the present drug therapy, even with a cooperative patient is extremely difficult.

Another reason why we should not be too satisfied with the present state of hypotensive drug therapy is the occurrence of large fluctuations in blood pressure, either by changes in posture, exercise, or straining with the constant danger of vascular accidents.

There is no evidence that adrenergic drugs are correcting the fault of hypertension and we are treating a symptom and not a disease with rather powerful drugs. That may sound too pessimistic but I cannot help but consider the lack of rational therapy as a severe impediment in my own therapeutic thinking. Only in eases of severe benign or malignant hypertension should vigorous hypotensive treatment be undertaken.

Schroeder does not agree with this viewpoint and thinks that malignant hypertension is seen less and less because hypertension is so widely treated that the malignant stage no longer develops very often. A detailed account of the different drugs is impossible and unnecessary. I shall only discuss highlights as to advantages and disadvantages of their administration.

BASIC AGENTS

1. Ganglionic blocking agents.
2. Direct peripheral dilators like hydralazine (the only drug increasing renal plasma flow in the face of lowered blood pressure.)
3. Salurctics such as chlorothiazide, hydrochlorothiazide.
4. Rauwolfia and alkaloids.
5. Amino oxidase inhibitors.
6. Anti-serotonin drugs, BAS, still in experimental stage.

In severe hypertension you cannot obtain an even control of blood pressure with ganglionic blocking agents alone. You see that if you take enough blood pressure readings. These agents are excreted rapidly and frequently doses are essential at least every four hours. Also you have to change the dose frequently in order to avoid peaks of hypertension and nadirs of hypotension.

Each year we hear of major advances in control of hypertension by the development of agents affecting the sympathetic reflexes. The trouble is that they all produce predominantly postural hypotension and possess other perilous side effects.

Others like the amino oxidase inhibitors should be used very cautiously because of the hepatotoxic and cerebral effects.

That asymptomatic hypertension can be favorably influenced by the reduction of blood pressure is a presumption. It has not been proven clinically. All forms of drug treatment are attended by inconvenience and are expensive and so it behooves us as physicians to select our patients very carefully.

Hoobler from Ann Arbor recognizes the different groups where *treatment is not necessary but follow-up studies are indicated as follows:*

GROUP I.

These patients should exhibit no evidence of left ventricular hypertrophy or cardiac insufficiency and no major renal function impairments. In this category Hoobler puts labile patients with neurocirculatory manifestations, and elderly patients with a systolic blood pressure of 200 and a diastolic pressure not exceeding 100.

GROUP II.

Where, according to Hoobler, mild hypertensive therapy is indicated, this group mainly consists of younger persons of both sexes with an average blood pressure of 160/100, and of middle aged men with a blood pressure of 160 to 180 over 100 to 110 because of the increased coronary risk in the male sex with moderately elevated blood pressure.

Patients whose usual blood pressure exceeds 220/120 should be candidates for vigorous therapy if milder regimens do not lower the blood pressure and especially if vascular complications have appeared.

In these persons the risk of a serious accident or death from the disease takes precedence over the inconvenience expected from the use of more potent drugs. They need hospitalization until the blood pressure reaches about 160/100 at least in the upright position.

Therapeutic Agents

Effective suppressive treatment must be maintained preferably with Rauwolfia, alkaloids and oral diuretic agents. The drug of choice presently is chlorothiazide 500 mg. or hydrochlorothiazide 50 mg. b.i.d. Serum potassium levels should be obtained after prolonged treatment.

Also watch for rhythm disturbances, particularly in association with digitalis administration, in patients with serious hypertensive heart disease.

Hyperuricemia was observed in a few cases with precipitation of gout. But in general it can be said that our experience in administration of saluretic drugs either alone or in combination with other hypertensive agents was very satisfactory. The hypotensive action is maintained for a long time without important changes in electrolyte equilibrium.

If there is no response after one or two months of treatment, reserpine should be added to the chlorothiazide regimen in a dosage of .75 to 1 mg. daily for another 6 weeks. Later a maintenance dose of .25 mg. or less may be beneficial.

The advantage of reserpine is that you rarely get excess hypotension but you have to watch for marked mental depression, agitation or confusion. Reserpine is very effective in treatment of hypertensive crises.

Ganglionic Blockers

Ganglionic blockers control blood pressure rapidly and effectively but need close supervision. Especially watch for bowel and bladder paralysis and never give them when anuria is present.

Hydralazine stimulates the cardiac output and can be usefully administered in anuria, toxemia and juvenile hypertension but often causes headaches and nausea. Hydralazine also should be used during background therapy with thiazide derivatives.

The drug is a cardiac stimulant and exhibits antihistaminase actions. It is therefore contraindicated in heart failure, angina pectoris and peptic ulceration, and is wise to give it always with antihistamines. Caution in presence of renal insufficieney is also warranted. The drug is particularly effective in lowering the diastolic pressure.

Dosage is very variable. Ten to 25 mg. 4 times a day to start with can be gradually increased up to 400 mg. When given in higher doses, reactions resembling lupus erythematosus have been reported.

With the new sympatholytic agents bretylium tosylate and guanethidine I have no personal experience. They seem to be very powerful agents with strong postural pressure reduction and the reports as to toxicity vary. Bretylium

has already been given up by some investigators. But guanethidine, according to reports from England and Germany and in this country (Ismelin), seems to have a therapeutic-toxic ratio more favorable than any of the other potent antihypertensive drugs.

Mebutamate (Capla), according to studies done in this country seems to act favorably in combination with hydrochlorothiazide.

Spironolactone which blocks the sodium retaining effect of aldosterone, is also a newer drug I should mention without the benefit of personal experience. It is a very expensive drug and no extensive studies of it have been completed. It apparently does not cause orthostatic hypotension and seems to be useful in part with edema aggravated by excessive aldosterone secretion. More severe side reactions so far have not been reported.

If medical treatment is unsuccessful or patients become drug refractory, sympathectomy, particularly of the supradiaphragmatic variety should be recommended. The removal of the sympathetic inervation of the splanchnic area in combination with maintenance of thiazide therapy seems to be very beneficial.

It seems as if the advent of thiazide derivatives will be of increasing significance for the almost forgotten sympathectomy. Surgical treatment is successful (as to blood pressure responses and life expectancy) only in cases where renal biopsy shows that the organic renal lesions are slight, when there is no marked arteriolosclerosis. The surgical success depends on well compensated kidneys. Renal insufficiency constitutes a contraindication to sympathectomy.

Other contraindications are advanced cerebral arteriosclerosis, severe coronary arteriosclerosis, coronary infarction but not cardiac insufficiency. Some authors, like Milliez in Paris, consider only renal insufficiency as a contraindication and suggest operation on all patients provided they are under 50 years of age and have not been suffering from marked peripheral vascular sclerosis.

In Conclusion

In conclusion, we come back again to the importance of the kidneys. And it is to be hoped that the combination of pyelography, aortography, kidney function assays, employing both ureteral catheterization flow studies and measurement of pick up of radioactive agents, will give us a clearer picture concerning the role of renal ischemia and its potential pathologic changes upon the capillary bed.

New Drugs in the Cold War

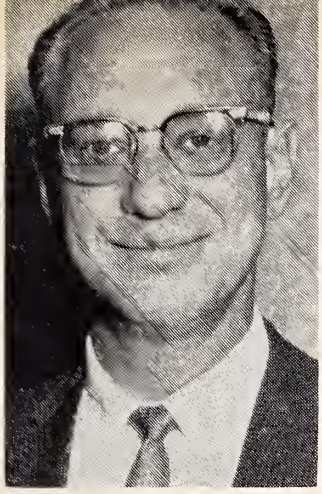
"We are now engaged in what is probably the greatest struggle between nations in all history. We call it the Cold War.

"It is a war that requires our efforts in many fields. In some, we have been most successful. One of these is in the improved treatment of diseases. New drugs are an important factor in our success in this area.

"Our excellence in the treatment of disease may very well be decisive to the ultimate outcome. Surely our efforts should be directed to maintaining and increasing our leadership.

"This is no time for legislative changes that even create a possibility of retarding our continued progress. S 1552 (Kefauver bill) not only entails such a possibility but, in my judgment, would almost certainly do precisely this."

Lowell T. Coggeshall, M.D.
Vice President
University of Chicago, to
Senate Subcommittee on
Antitrust and Monopoly



Dr. Joseph

Combined Antidepressant Tranquilizer Therapy in Somatic and Psychosomatic Illnesses

Samuel R. Joseph, M.D.

We need articles like this. It reports actual experience with everyday problems. It is unsubsidized, unbiased and not belabored by ritualistic concentration on methodology.

THE satisfactory responses obtained with antidepressants in patients who had not responded satisfactorily to tranquilizers has made it apparent that a masked depression often lurks beneath complaints of anxiety, tension, palpitations, and similarly well-known psychosomatic complaints.

On the other hand, chronic, unchecked anxiety and tension often result in apathy, listlessness, insomnia, anorexia, and other typical symptoms of depression. And often it is hard to tell where anxiety leaves off and depression begins. In fact, anxiety and depression are often present together, though usually one predominates.

Since the use of tranquilizers alone in such patients may deepen the depression, while antidepressants alone may aggravate anxiety or agitation, I decided to try a tranquilizer and antidepressant together. The tranquilizer *trifluoperazine, seemed suitable because it does not appear to deepen depression. The antidepressant, **tranylcypromine, is a non-hydrazine derivative that is new and reportedly rapid-acting.

In September, 1960, I began using the drugs together, usually in doses of 10 mg. tranylcypromine, and 1 or 2 mg. trifluoperazine.

During a period of one year 62 ambulatory patients were treated. These 14 men and 48 women were from 22 to 81 years old, and their symptoms of emotional distress had been present for from three months to one year. In 15 patients, the symptoms were associated with organic disease, including arthritis, asthma, arteriosclerosis, diabetes, carcinoma, and allergic rhinitis.

Often, the emotional suffering was more profound than the physical suffering caused by the organic disease. Many said they had become accustomed to the pain or other symptoms of organic disease, but that they could not stand their feelings of frustration or constant "edginess." In the other 47 patients no organic disease was found, but nine of the women were going through the menopause.

Very seldom did these patients simply complain that they were sad or depressed. Almost invariably, they had a sore back, or their heart was beating too fast, or they were constipated, or had terrible headaches or some other somatic problem.

In some patients, of course, some of these symptoms were caused by organic disease. Indeed, the need for treatment to relieve emotional suffering sometimes became apparent only when

2021 North Central Avenue, Phoenix, Arizona.

* Stelazine ® 1 mg., Smith, Kline & French.
** Parnate ® 10 mg., Sfith, Kline & French.

control of the organic disorder did not seem to help the emotional reaction. In others, they were simply real disorders the patient was more willing to accept than the equally real, but less acceptable (to the patient) psychic disorders.

Gradually they brought these problems out into the open. They were unable to concentrate, were irritable, and worried all the time. Some said they could get nothing done any more. Others said that they felt driven and were trying to do too much. Several were concerned about becoming impotent or frigid. Others said they were easily irritated by their children, and at the same time were afraid to spank them because they might lose control of themselves and not know when to stop.

Some were becoming increasingly hopeless, developing a "what's the use?" attitude. In others, mounting anxiety threatened to reach panic proportions. Their changing or deteriorating attitude of course made treatment, medical as well as psychic, more difficult.

In all but nine patients, treatment was begun with 10 mg. tranylcypromine and 1 or 2 mg. trifluoperazine twice a day. Five patients received only one dose a day initially, and four received doses of 20 mg. tranylcypromine and 2 mg. trifluoperazine twice a day. They were seen weekly during the first month of therapy, and doses were adjusted according to their responses. They were reduced in ten patients and increased in four, with no patient receiving more than 40 mg. tranylcypromine and 4 mg. trifluoperazine a day.

Treatment was continued for from three weeks to eight months. No other psychopharmaceuticals were used during the evaluation, but appropriate therapy for organic disease, e.g., insulin in the diabetic patients, was continued.

Results

During each visit, I questioned the patient to learn of changes in mental and emotional status and noted whether any changes in appearance, speech, gestures, etc., had occurred. If decided improvement was noticeable within one week and was followed by complete control of symptoms of emotional distress, the response was considered *excellent.* If decided improvement within one week led to nearly complete control of symptoms, the response was considered *good.* If final improvement was less marked, or if initial response did not occur as rapidly, the response was considered *fair.* All other responses were considered *poor.*

By these criteria, the response was as follows:

RESPONSE TO TREATMENT WITH TRANYLCYPROMINE AND TRIFLUOPERAZINE IN 62 PATIENTS

Response	No.	Percent
Excellent	17	27%
Good	24	39%
Fair	8	13%
Poor	13	21%

The poor results in the 13 patients were either because of no improvement or because side effects occurred and treatment was discontinued.

No serious or toxic side effects were reported, although some patients complained that they became drowsy (7), couldn't sleep (5), had a dry mouth (2), became more excited (2), became light-headed (1), had blurred vision (1), or had an eye twitch (1). All of these side effects disappeared when dosage was reduced (11) or discontinued (8).

Patients who failed to respond satisfactorily to treatment with these drugs have since been referred to a psychiatrist (5 patients), been given other medication (5 patients), or have failed to return for further treatment (3 patients).

In general, the drugs relieved symptoms of mental and emotional distress and proved a useful adjunct in patients with chronic organic diseases. In fact, some of the most desirable and clear-cut changes occurred in these patients. For example, diabetic and arthritic patients who had begun to complain about the regimen prescribed seemed more willing to make the best of it and came to realize that their problems were much less limiting or severe than they had thought.

With reassurance, they were pleasantly surprised to find that they could still perform activities they had been denying themselves simply because they were afraid they were not up to it. In short, they regained their perspective and were again able to use the common sense that had been dulled by depression and anxiety.

For the patients without organic disease, the cause of the emotional reaction was not so apparent or clear-cut.

As fatigue and lethargy disappeared and their

powers of concentration were restored, they were able to discuss themselves, their environment, and their personal relationships more comfortably and more objectively. Subjective bias and prejudice were reduced (*not* eliminated) and the patients were better able to understand and accept that their problems were primarily mental and emotional. Also they realized that they bore at least some personal responsibility for these problems and would have to make changes in their behavior.

Identifying the problem, of course, was the essential first step. With counsel and guidance, most of the patients have since made progress to varying degrees in working out satisfactory solutions or learning to live with their problems.

For some, this has meant taking a more active role in their family relationships and expressing their feelings and dislikes more openly. In other patients, of course, improvement meant not more but less complaining, and making allowances for human imperfections in a spouse.

For still others, it meant setting more realistic goals for themselves. In this category were housewives who could not say "no" to excessive demands for their energy and time without feeling guilty about it, and who then became depressed and anxious because they could not really perform *any* of their many tasks satisfactorily.

Also in this category were men who could not accept that they were not, after all, going to continue to advance in their careers as rapidly as they had during their early years. These men could not understand why they were unable to concentrate as well as they used to and why they were tired, depressed, irritable, and tense all the time. In 22 of these patients, treatment with tranylcypromine and trifluoperazine has been discontinued and improvement has been maintained.

Some (six) patients relapsed when the drugs were discontinued, however, and continued treatment to maintain symptomatic relief, usually 10 mg. tranylcypromine and 1 or 2 trifluoperazine a day, is still necessary at this writing.

Summary

A new antidepressant (tranylcypromine) and a tranquilizer (trifluoperazine) were used together in treating 62 emotionally distressed patients who had elements of both depression and anxiety among their presenting complaints. About one-fourth of them had organic diseases, including arthritis, diabetes and cancer; the others showed no evidence of organic disease.

Response to these drugs was judged to be *excellent* in 17 (27%) of the patients, *good* in 24 (39%), *fair* in 8 (13%), and *poor* in 13 (21%).

Treatment with them proved very useful as adjunctive therapy in patients with chronic organic illness. These patients were better able to accept the dull routines imposed by their illnesses, became cooperative again and showed less despair. Improved mood and more realistic outlook was noticeable in them and in patients free of organic disease. Patients given the drugs were, with counseling, able to put their problems in better perspective and, if needed, work out satisfactory solutions to them.

Nineteen patients reported side effects, usually drowsiness, insomnia, or dry mouth. All side effects disappeared when dosage was reduced (11 patients) or discontinued (8 patients).

From Test Tube to Bedside

"Each year the pharmaceutical industry in this country makes, discovers or synthesizes more than 100,000 chemical compounds or substances. Of these, perhaps from 2500 to 2800 reach the stage of investigation to determine their usefulness in humans. And of this latter number, perhaps 30 to 40 may eventually appear on the market.

"To undertake this huge job of searching and testing, there are more than 16,000 scientific personnel employed by the pharmaceutical industry. And an average of about 5 to 6 years intervene from the time an idea is discovered in a test tube and when it finally emerges for general use in sick people."

Austin Smith, M.D.
in Military Medicine
March, 1962



Dr. Brown



Dr. Nelson

Popliteal Aneurysms

Lee B. Brown, M.D.

Arthur R. Nelson, M.D.

This is an excellent article on the current techniques in the surgical management of popliteal aneurysms. This lesion is not a common one, but when present will almost always cause serious trouble resulting with disturbing frequency in loss of a lower extremity. However, prompt surgical intervention with use of our modern vascular techniques can give excellent functional results.

OF THE aneurysms that occur in the extremities, popliteal aneurysms are the most common. But still they are really not commonplace problems. The average practitioner in medicine will not see more than a very few in his entire professional life.

If poplieteal aneurysms are not very common, they are most certainly serious. The majority of popliteal aneurysms eventually cause trouble, and the loss of limb is very considerable when complications develop. Elective excision with the insertion of an arterial prosthesis is a very satisfactory procedure with good results. Even in the face of serious complications, fair results can be expected if surgical intervention is prompt.

HISTORICAL NOTES

Matas[11], Linton[9], and Austin and Thompson[1] have recorded the important historical facts. The history of popliteal aneurysms is in a large way the history of vascular surgery, a popular and exciting subject.

Antyllus, in the fourth or fifth century, advised proximal and distal ligation. In the same century, Philagrius of Macedon performed ligation but also excised the sac. Aetius two centuries later performed proximal ligation and intrasacular occlusion of the distal artery, which suggests the endo-aneurysmorrhaphy of Matas many centuries later.

These same procedures were later revived by others. Anel in the sixteenth century advised proximal ligation close to the sac, sometimes referred to as the Anel method. Guillemeau in the same century went a little further than Anel. He performed proximal ligation, opened the sac, presumably controlled bleeding distally from within the sac, packed the aneurysmal sac with lint, and allowed the wound to suppurate.

Purman in the seventeenth century advised the method of Philagrius, that is ligation and excision of the sac. Hunter in the eighteenth

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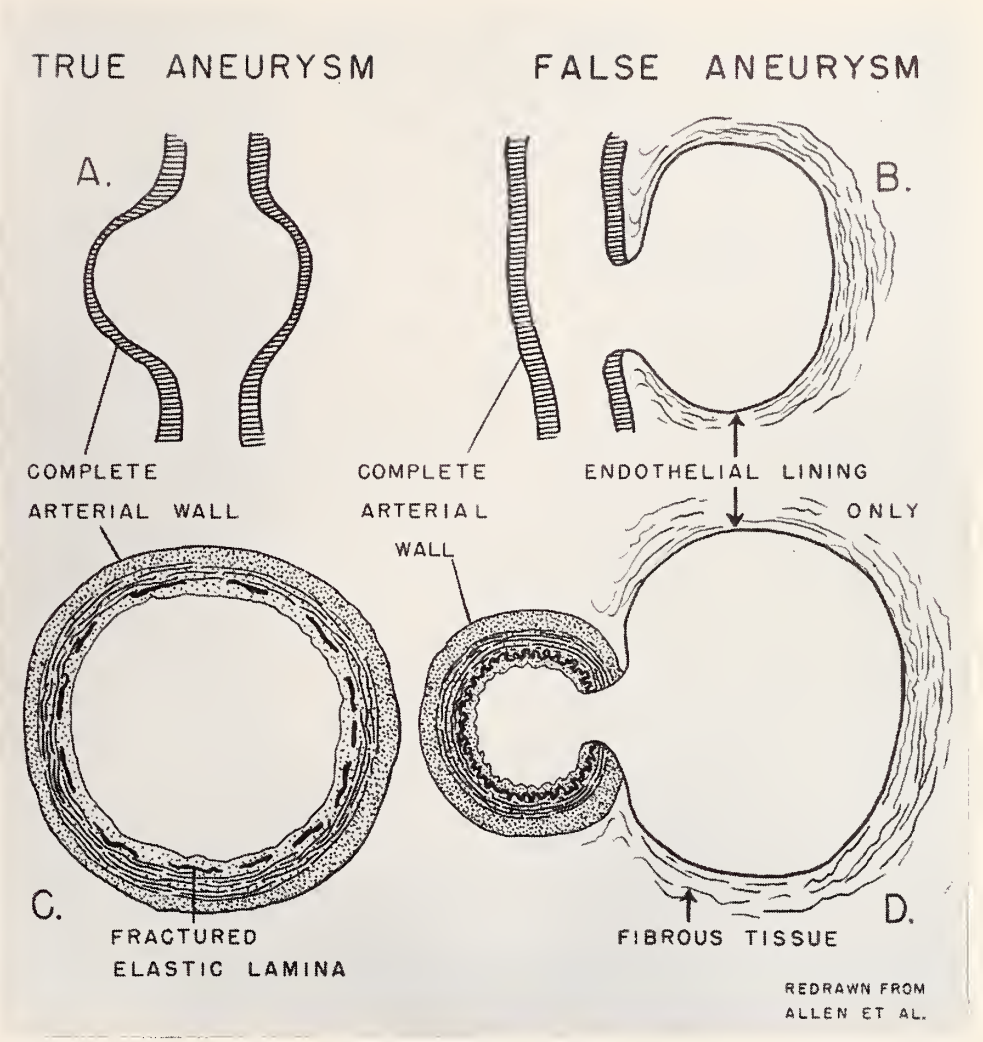


FIG. 1. True aneurysms involve the entire thickness of the arterial wall. False aneurysms are formed as a result of a rent in the arterial wall, spontaneous or traumatic. The wall of a false aneurysm consists of fibrous tissue derived from the surrounding tissues which confine it. The inner layer may consist of hyalinized connective tissue; and this may be covered with endothelium.

century did a proximal ligation in Hunter's canal which distinguished it from Anel's technic. One still reads of the Hunterian method of treating aneurysms.

Matas[12], sometimes called the father of modern vascular surgery, described his extensive experience with aneurysms in general and his legendary endo-aneurysmorrhapy technics in the early 1900's. In 1920, he reported on 154 popliteal aneurysms treated by obliterative, restorative, and reconstructive endo-aneurysmorrhapy.

Good results were obtained in 93.6 per cent of cases, gangrene occurred in 5.2 per cent of cases, and there was only one (0.6%) death! A present day vascular surgeon would gladly take these excellent results for his own.

In 1931 Mulvihill and Harvey[13] presented experimental evidence of the effectiveness of sympathectomy in preventing the temperature drop which occurred in the limb of a dog after ligation of the common iliac artery, and it also relieved the coolness which resulted from ligation if sympathectomy was performed later and separately.

Bird[2] reported the use of sympathectomy along with endo-aneurysmorrhaphy in the treatment of popliteal aneurysms in 1934.

Linton[9] reported a series of 14 cases treated by sympathectomy and partial or total aneurysmectomy in 1949 with good results.

Carrel[4] at the turn of the century performed monumental experimental studies which laid the way for direct vascular technics to say nothing of his amazing studies on the transplantation of organs. Although we think of vein and artery grafts as recent innovations in surgery, they were both used clinically at the turn of the century, though not with great success.

Delbet[1,11] in 1907 used an arterial homograft to restore continuity after excising a popliteal aneurysm, but it was not successful. Pringle[15] in 1913 used a saphenous autograft to restore continuity successfully. Blakemore[3] reported the use of a vein autograft in the treatment of popliteal

aneurysm in 1947. The studies of Gross and associates[7] on the preservation and use of arterial homografts set the stage for the development of many present day vascular procedures.

Finally the use of synthetic prostheses in peripheral vascular surgery was tremendously stimulated by the crimped, highly flexible, and durable prosthesis described by Edwards and Tapp[5] and modified by others.

INCIDENCE AND PATHOLOGY

The true incidence of popliteal aneurysms is not really known. The area is rarely inspected at autopsy.

Matas[12] in 1920 reported on 289 aneurysms, 154 of which were popliteal. Reed[16] in 1926 reported on all the aneurysms which had been seen at Johns Hopkins Hospital, and there were 16 popliteal aneurysms. Gifford and others[6] reported on 69 patients with popliteal aneurysms seen at the Mayo Clinic from 1913 to 1951, a thirty-eight year period.

The vast majority of popliteal aneurysms are arteriosclerotic. They tend to be elongated, sausage-like, fusiform aneurysms which commence just distal to the termination of Hunter's canal, and extend almost to the bifurcation of the popliteal artery into the anterior and posterior tibial vessels. In earlier times, syphilis was probably a much more important cause.

Trauma rarely produces a true aneurysm. The distinction between a true and false aneurysm is shown in Figure 1. *(preceding page)*

CLINICAL CHARACTERISTICS AND BEHAVIOR

Popliteal aneurysms occur in the male in upwards of sixty per cent of the cases and the average age is in the sixties. They are associated with aneurysms elsewhere in a considerable number of cases, particularly with contralateral popliteal aneurysms.

Of 69 patients seen at the Mayo Clinic, 40 had bilateral popliteal aneurysms and 17 of the 69 had aneurysms involving other arteries, particularly the femoral vessels and the abdominal aorta. The right and left popliteal arteries are about equally affected.

In this same series of patients, there were 100 aneurysms occurring in 69 patients. The aneurysms were causing symptoms in 65 instances, and in 35 instances there were no symptoms[6].

There are five major complications associated with popliteal aneurysms other than local discomfort: (1) Neurologic symptoms caused by pressure on the tibial nerve chiefly but also the peroneal; (2) pressure on the popliteal vein resulting in edema with or without evidence of phlebitis; (3) embolization of the distal arterial tree from mural thrombus resulting in varying degrees of ischemia or gangrene; (4) complete thrombosis of the aneurysm, again with varying degrees of ischemia or gangrene; and (5) rupture of the aneurysm.

Most of these complications are shown in Figure 2. *(opposite page)*

Gifford and associates[6] found 62 of 100 aneurysms to have resulted in complications. Thrombosis occurred in 20, embolization in 14, thrombosis and/or embolism in 11, gangerene in 24, vein complications in 24, rupture in 16, and neurologic symptoms in 12.

The seriousness of popliteal aneurysms can further be emphasized by considering the frequency of amputation.

Of 100 aneurysms observed, 49 were complicated when first seen. But over the course of an average of fifty months, 62 were complicated.

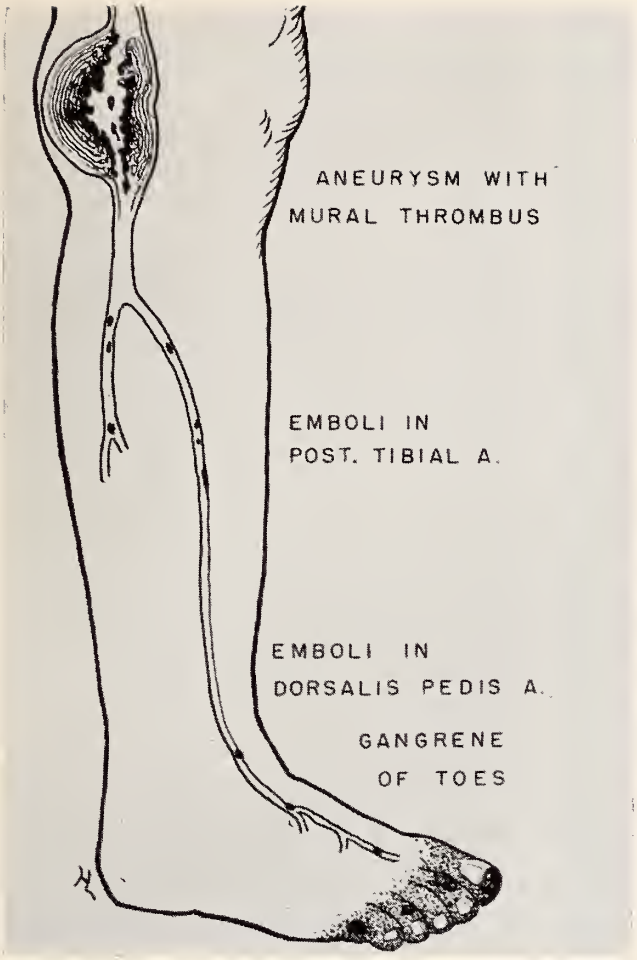
Of 73 aneurysms treated without operation (70 followed an average of 44 months), 33 developed complications, and 16 (21.9%) required amputation. Nothing is said about the disability resulting from the complications[6].

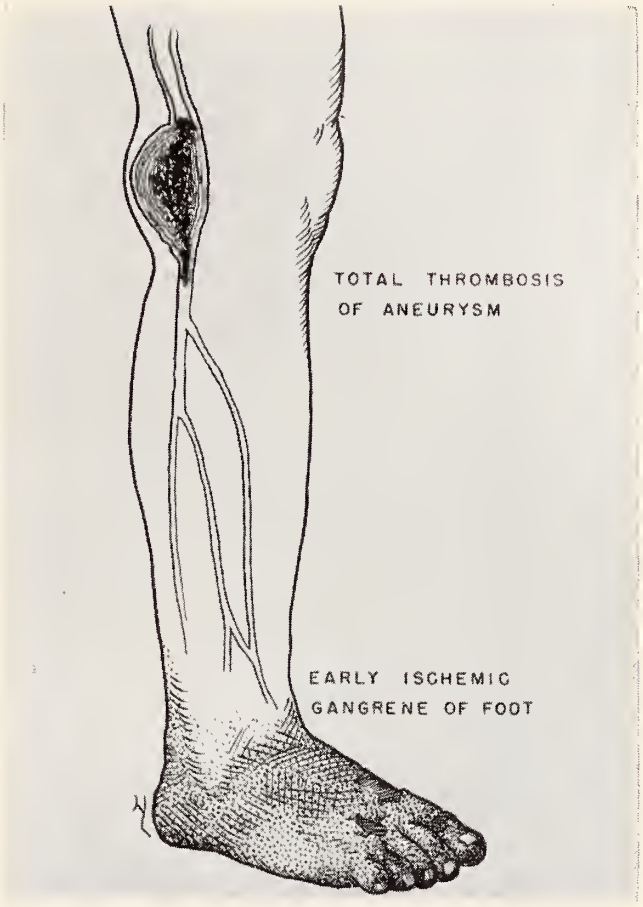
DIAGNOSTIC CONSIDERATIONS

In a few words, the diagnosis of popliteal aneurysms is usually simple: Palpation is often sufficient.

Careful attention should be given to the presence or absence of distal pulses, the state of the circulation in the foot, and signs suggesting venous stasis or neurologic involvement. A solid non-pulsatile mass in the popliteal fossa does not necessarily mean the mass is other than an aneurysm. It may be a totally thrombosed aneurysm.

Baker's cyst is the most common differential





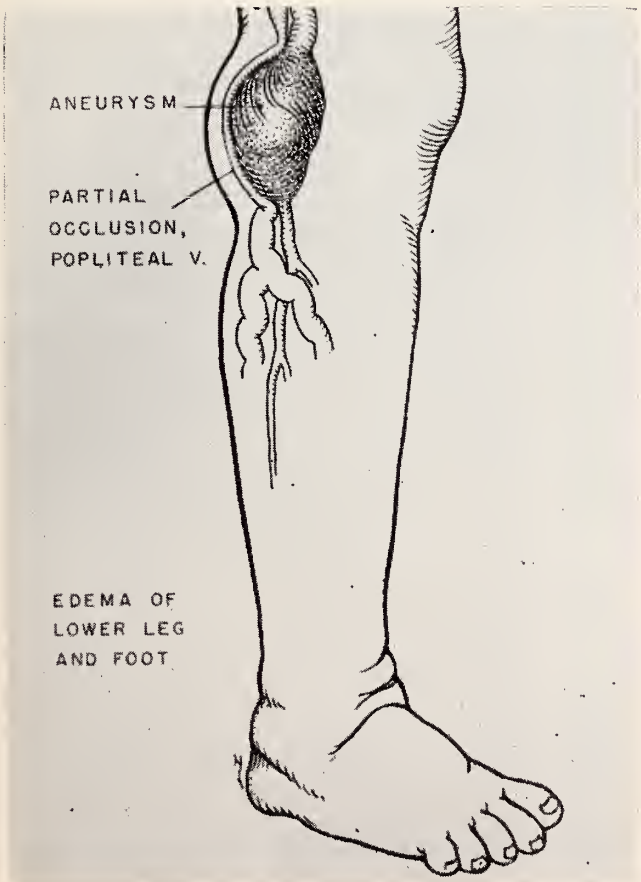
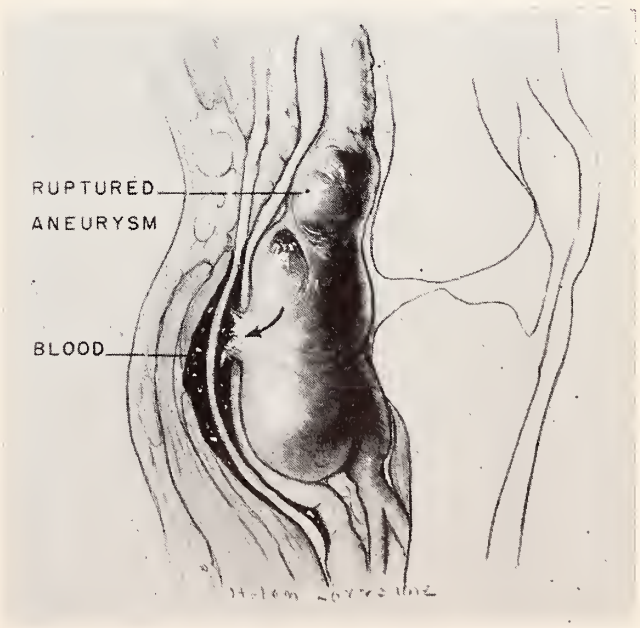


FIG. 2. Four of the five major complications of popliteal aneurysms are shown. The fifth, not shown, is nerve involvement. Reproduced from Old.[14]



diagnostic problem. Benign and malignant tumors arising from nerve and the musculoskeletal parts should also be considered.

Rarely are conventional X-ray or arteriography required. When the diagnosis is in question, one or both may be necessary. Exploration may rarely be necessary before the diagnosis is fully established.

SURGICAL CONSIDERATIONS

Figure 3 shows the anatomy of the popliteal fossa, and Figure 4 shows a popliteal aneurysm. *(opposite page)*

The relationship of the tibial and the peroneal nerves and the popliteal veins to the arteries should be noted. It is clear that both nerve and vein may be firmly bound in the wall of the aneurysm. And leaving a part of the wall of the aneurysm may be necessary to avoid injury to these structures.

Angulation and partial or total occlusion of the anterior tibial artery by torsion from an enlarging aneurysm is illustrated in Figure 5. *(following page)*

The selection of the proper procedure is usually not difficult, and the judgment rests on whether the anterior and posterior arteries are patent.

If they are patent, then resection of the aneurysm, insertion of a crimped prosthesis, and restoration of pulsatile flow is clearly the indicated objective.

If the distal vessels are not patent, as may be the case with total thrombosis of the aneurysm or extensive embolization of the distal bed, or if the distal bed cannot be opened by trying to extract the thrombus with varying technics, then obliterative endo-aneurysmorrhapy or partial aneurysmectomy are the procedures of choice.

Serious consideration should be given to obliterative endo-aneurysmorrhaphy in this situation because this will more surely avoid injury to important collaterals, particularly the superior geniculate vessels. This conservatism in surgical management may well be the factor which spares a severely ischemic leg.

The various types of endo-aneurysmorrhaphy and the several types of arterial replacements are are shown in Figures 6 and 7 respectively. (*following page*).

The need for sympathectomy is somewhat debatable. Most vascular surgeons would surely agree that if pulsatile flow cannot be restored, sympathectomy should be done. Many feel that sympathectomy should be done more or less routinely to prevent spasm as a result of surgical manipulation, and should the graft become occluded because of marginal outflow, then the collateral bed would have been improved. We are inclined to the latter view as a general proposition.

We favor the use of anticoagulants when a prosthesis has been used. We believe this will do everything possible to insure a good result by preventing thrombosis of the graft. The caliber of the graft may not be large; the flow through the distal bed may not be very great; and finally the graft is subject to repeated angulation and extension with walking and position changes. All of these factors favor thrombosis and can be minimized by anticoagulants which we administer for prolonged periods.

The care given to any patient with peripheral vascular disease should not be neglected here. Careful attention to the feet, weight control, and the avoidance of smoking should be emphasized.

RESULTS OF SURGICAL TREATMENT

The results of the surgical treatment of popliteal aneurysms vary widely. It is necessary to know the conditions under which surgery was performed as well as the character of the surgery. No large series of patients who have had elective resection of the aneurysm and the insertion of a prosthesis or homograft in the presence of an open distal atrerial tree are available.

A few reports are available which gencrally indicate very good results.[1,8,14,17] The results of Matas[12] utilizing aneurysmorrhaphy have already been referred to. Linton[9], Lord[10], Gifford et al[6], utilized endo-aneurysmorrhaphy or partial aneurysmectomy either with or without sympathectomy with generally satisfactory results.

CASE REPORTS

Case 1, A.M., age 63, white male, railroad yard worker. He was previously in excellent health and very active. Six hours prior to operation, he developed sudden exquisite pain in his right leg and foot followed by numbness and inability to move his right leg. He recalled in retrospect episodes of dull discomfort in the back of his right knee for which he had used heat and liniments. He had had no

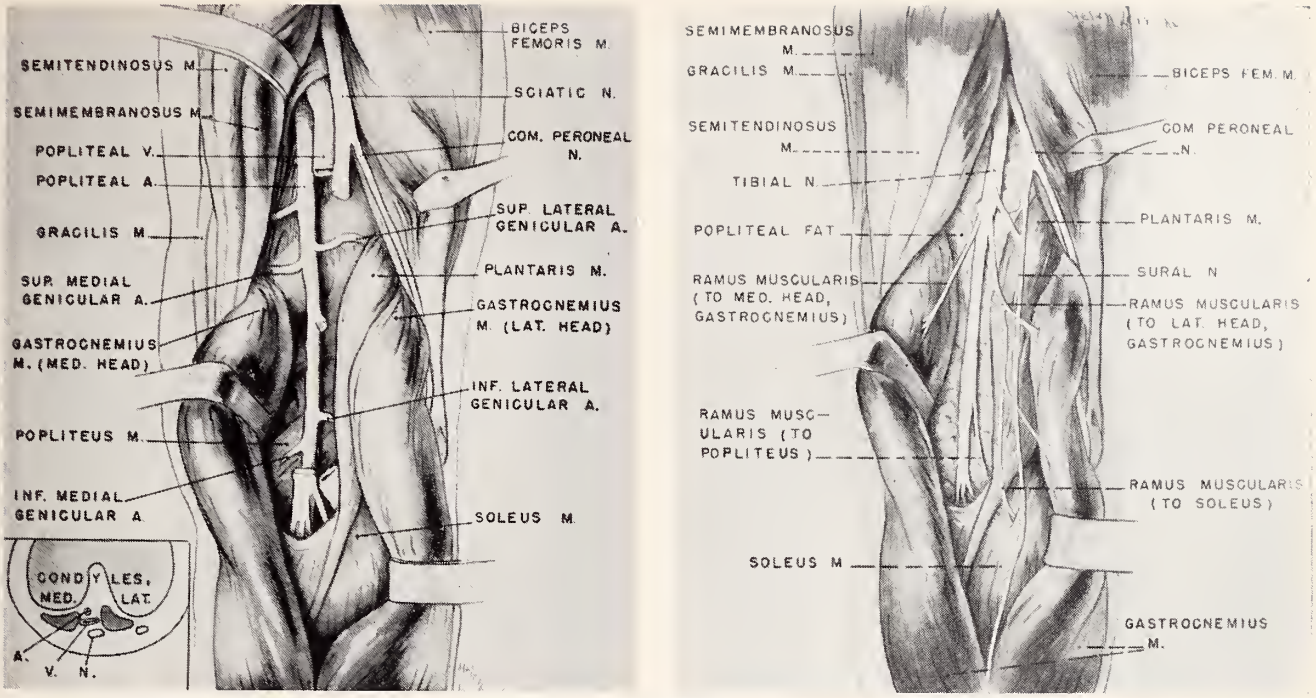


FIG. 3. The anatomy of the popliteal fossa: superficial (left) and deep (right) is shown. Redrawn from standard anatomy texts.[14]

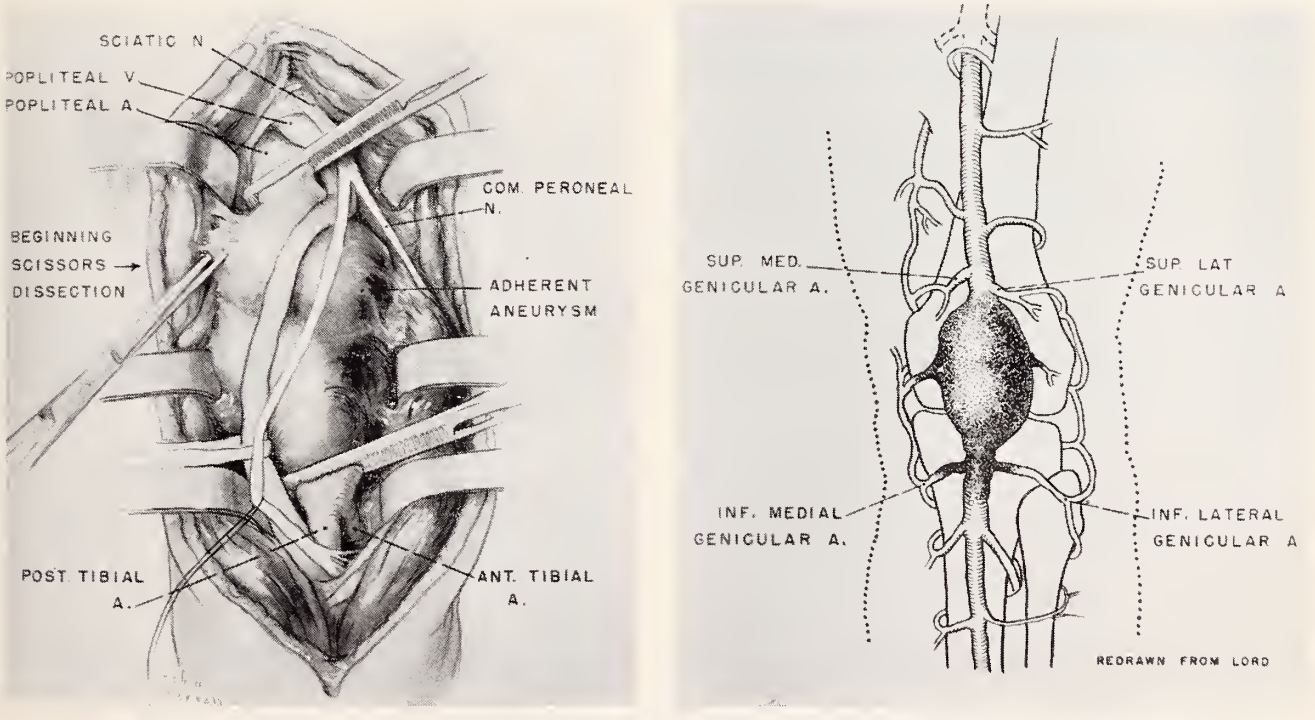


FIG. 4. At left is an artist's conception of a partially dissected popliteal aneurysm.[14] Observe the relationship of the popliteal vein and the tibial nerve. Illustration at right, redrawn from Lord,[10] shows the location of a popliteal aneurysm relating it to the arterial branches and collaterals about the knee.

symptoms suggestive of vascular disease.

On examination there was a firm non-pulsatile mass in the right popliteal fossa which was quite tender. No pulses were palpable distal to this point. His foot was pale, cool, and sensation was markedly reduced. He could still move his toes. There was no edema.

Six hours after the onset of symptoms, right lumbar sympathectomy followed by resection of the aneurysm and insertion of a crimped nylon prosthesis was carried out. The aneurysm was completely thrombosed. There was no back bleeding. With repeated suctioning of the distal bed and the instillation of thrombolytic agents, the distal arterial bed was only partially opened. At the conclusion of the procedure, the leg was improved but the condition of the foot was still precarious. Amputation was required two days later. The patient otherwise made a good recovery.

Comment: The great seriousness of popliteal aneurysms when complications develop is emphasized. The two commonest complications are here illustrated: namely thrombosis and distal embolism. Elective resection of the aneurysm prior to the onset of complication would have undoubtedly given a good result.

Case 2, L.B., a 67 year old retired fisherman. He had noted some claudication in his calf and coolness over his foot over a six month period. Three months prior to his admission he had consulted a physician because soreness behind his right knee, swelling of his ankle, and tingling and numbness on the sole of his foot. He was treated by means of elastic support and nicotinic acid. Ten days prior to operation, he had the onset of severe pain in his right leg and foot with coldness of the foot, loss of sensation, and great difficulty moving his foot. He was treated with anticoagulants and the foot survived the insult.

Following this acute episode, examination of the foot revealed a non-pulsatile mass in the right popliteal fossa, the right foot was blanched and cool, there was cyanosis of the tip of the second and fourth toes, there was moderate edema of the foot, and no pulses were palpable distal to the popliteal mass. There was marked diminution of sensation to touch and pinprick.

Ten days after the onset of the acute complication, sympathectomy was performed followed by partial aneurysmectomy. The distal arterial bed was found to be totally occluded and efforts to open it were futile. The patient's immediate recovery from the operation was satisfactory and there was no evidence of gangrene. Five months after the operative procedure, the patient had improved considerably but he still had claudication of his calf, some coolness of his foot, and occasional transient burning of the sole of his foot.

Comment: The patient's physician failed to recognize the presence of a popliteal aneurysm and the associated signs resulting from involvement of the popliteal vein and the tibial nerve. Elective operation at the onset of his symptom would have undoubtedly given a good result. The disability experienced following this less than ideal surgical procedure should be noted.

Case 3, A.N., 64 year old white male, previously in good health. He had noted mild discomfort behind his left knee and himself observed a pulsatile mass one year previously. He had no symptoms suggesting ischemia but had experienced transient numbness and tingling on the lateral aspect of his foot, and also he had several episodes of sharp cutting pain radiating from the knee to the foot. Examination disclosed a popliteal aneurysm with only fair distal pulses, no evidence of ischemia of the foot, and no evidence of venous or nerve involvement.

Resection of the aneurysm and insertion of a homograft was done. The immediate results were excellent as well as the results five years following operation. He maintained excellent distal pulses with no symptoms of ischemia.

Comment: Elective operation prior to the development of any serious complication was followed by an excellent result.

SUMMARY

Popliteal aneurysms, though not frequent, are very serious, whether they are producing symptoms or not. The disability and loss of limb resulting from their presence is very considerable.

Elective surgical treatment is safe and the results are generally good. If surgery must be undertaken in the face of complications, the results are not nearly so good. But still the salvage is considerable and quite worthwhile. Elective surgical management of all popliteal aneurysms and prompt intervention in the face of complications within a few hours are advised.

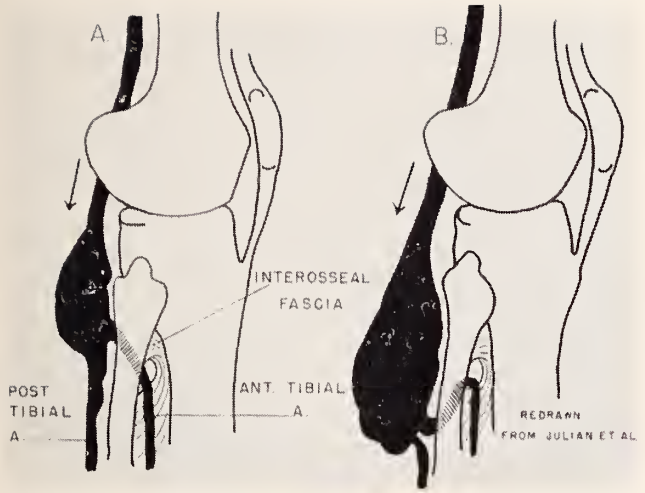


FIG. 5. The acute angulation of the anterior tibal artery, as a result of popliteal aneurysm, has been stressed by Julian et al,[8] and this illustration was redrawn from that source.[14]

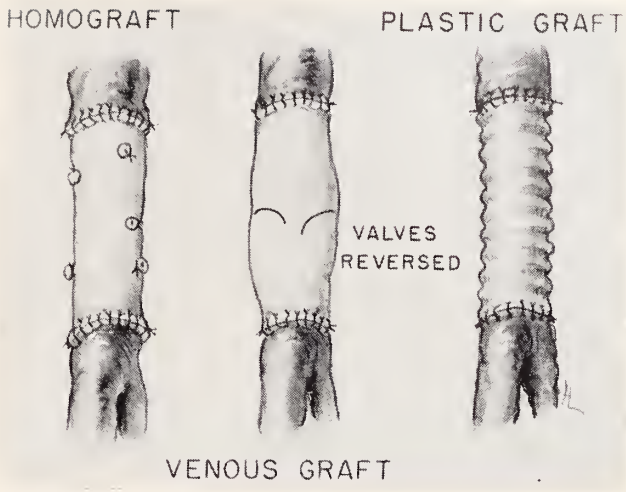


FIG. 7. An arterial homograft, vein autograft with valves reversed, and a crimped plastic tube are shown. Reproduced from Old.[14]

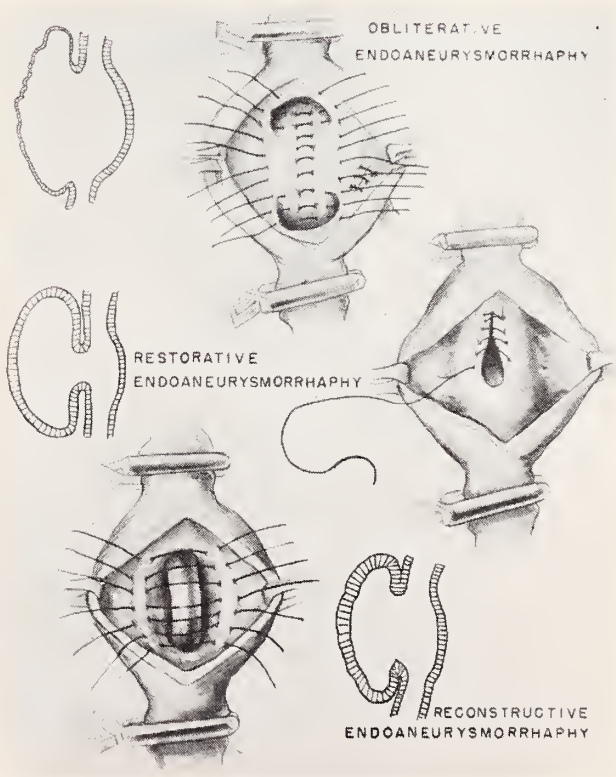
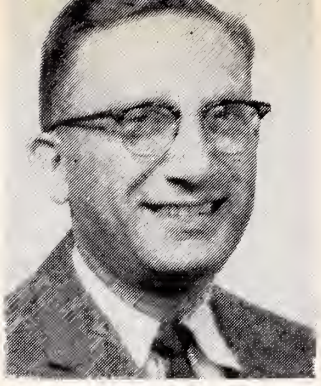


FIG. 6. The various types of endoaneurysmorrhaphy are shown.[14]

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Dr. Steinman

Original Articles

Mechanism of Action and Use of Aldosterone Blocking Steroids in Edema

Alfred M. Steinman, M.D.

A basic and practical discussion of aldosterone production and effect, plus measures utilized to achieve a diuresis with refractory edema states is presented. The role of "aldosterone — antagonist" aiding in the therapy is outlined. Clinical states where its best use can be anticipated are defined.

THE zona glomerulosa of the adrenal cortex produces a potent salt-retaining hormone, aldosterone, which has no glucocorticoid activity in concentrations found in blood.[1] Its synthesis and excretion are essentially independent of ACTH activity.

Aldosterone promotes the active reabsorption of sodium and its exchange for hydrogen ion and potassium in the distal convoluted tubule.[2] There is no concrete evidence that aldosterone has any activity in the proximal convoluted tubule.[3]

The stimulus for aldosterone secretion is not fully elucidated. Some experimental work[4,5] suggests that a reduction in the volume of blood between the aortic valve and the peripheral capillaries (termed the "effective arterial blood volume") acts as a stimulus in either the carotid body or the midbrain to promote the secretion of a hormone termed glomerulotropin. It is suggested that glomerulotropin is produced in the midbrain and that it specifically stimulates the glomerulosa cells to secret aldosterone.[6]

Increased aldosterone production in heart disease can therefore be explained by a reduction of the effective arterial blood volume in heart failure due to diseases of the heart. The basic common denominator in these cases is a diminished cardiac output.

In hepatic cirrhosis the mechanism of reduced effective volume is somewhat less obvious. Per haps the initiating mechanism in this instance is the marked pooling of blood in the viscera and the increased tendency to form a transudate as a result of the very high portal venous pressure: essentially a splanchnic phlebotomy. This would result in a reduced venous return to the heart and a reduced cardiac output. In addition, the alterations in peripheral vascular resistance and myocardial efficiency, as well as the decreased collodial osmotic pressure due to the loss of serum proteins, would tend to add to this problem.

The result therefore would be a reduced volume in the arterial tree and a potential stimulus for the release of glomerulotropin. It has been suggested that the intracellular sodium to potassium ratio may also be an important factor in aldosterone production.[7]

The altered physiology of the nephrotic syndrome is even more confusing. In this instance there is little evidence for the evistence of a diminished effective arterial blood volume.

Actually, only two mechanisms are immediate-

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ly apparent. The first of these is the marked decline in collodial osmotic pressure of the plasma. The other is related to the alterations in ionic concentration intracellularly. Either or both of these mechanisms might cause a stimulation of the receptors which results in glomerulotropin secretion.

Definite evidence of increased aldosterone production has been found in congestive heart failure with edema, cirrhosis with ascites, and the nephrotic syndrome with edema.[8,9,10] The role of the antidiuretic hormone in edematous states is poorly understood but is probably not very signficant.

That aldosterone excess does not cause edema in normal subjects has been documented very well by the administration of aldosterone. It causes sodium to be reabsorbed with water only transiently. A maximum of six pounds may be gained in this fashion. Beyond this point no further aldosterone effect can be seen in either the urine with reference to sodium or in the body weight of the subjects.[11]

Potassium loss continues or may even be increased in this situation. This would lead to the conclusion, therefore, that additional physiologic alterations must be operative to enable the production of edema. Renal hemodynamics and the questionable role of the antidiuretic hormone serve as possible examples of these additional mechanisms.

Aldosterone does, however, have an important role in the production of edema in the states described above. This has been demonstrated in humans. Adrenalectomy in patients with refractory edema was followed by diuresis resulting from the removal of the source of aldosterone.[12]

Thus, there is good rationale for anti-aldosterone agents in therapy. Since this discussion is limited to aldosterone-blocking steroids, I shall only mention that it is possible to inhibit aldosterone synthesis. None of the agents used in this sense have achieved significant clinical practicality.

An aldosterone antagonist by definition blocks the effects of aldosterone on its target tissue. Therefore, certain prime requisites are necessary to permit aldosterone blocking activity to be manifest.

First, aldosterone must be present. Second, the volume of altered glomerular filtrate presented to the distal convoluted tubule must be large enough to allow dynamic alteration at that site. The sodium content of this fluid must be large enough to permit effective interference with its absorption.

Third, the target organ, the tubular cells, must be capable of responding to aldosterone. Actually, the lack of ability to respond occurs only in patients with severe uremia.

It is obvious, therefore, that the absence of any of the above conditions will prevent or materially reduce the effects of any aldosterone-blocking agent.

Landau[13] reported the first observation of true aldosterone-blocking activity by another steroid. He gave progesterone to patients with Addison's disease who were receiving mineralo-corticoids. A sodium diuresis and potassium retention was produced. This observation provided a standard for anti-aldosterone action at the target organ site.

Utilizing this yardstick, Kagawa[14] observed that a series of new steroids designated 17-spirolactones were effective in antagonizing the effects of mineralo-corticoids on the renal metabolism of sodium and potassium in adrenalectomized rats.

Following this baisc work Liddle[17] studied the spirolactones administered to humans. Aldoster-

KAGAWA'S REASONING

The following points indicate the reasoning used by Kagawa for his belief that the 17-spirolactones are competitive antagonists of aldosterone action in the kedney:

1. **There is a structural similarity between the spirolactones and aldosterone. (Actually minor alterations in any structure may drastically alter its activity. Therefore reliance on structure alone is not a good index for predicting pharmacologic activity.)**
2. **The blocking activity of the spirolactone is dependent upon the dosage ratio of the spirolactone to the mineralocorticoid administered to an adrenalectomized animal.**
3. **No effect upon renal functions was observed in the adrenalectomized animal receiving no mineralo-corticoids.**

one production is suppressed in normal subjects receiving a high sodium intake. Therefore, the administration of a spirolactone would have little effect upon sodium and potassium metabolism in the salt-loaded subject.

If the normal subject then limits his sodium intake sharply, aldosterone production immediately rises and sodium retention occurs with potassium wasting. If this patient is then given an aldosterone antagonist, a diuresis of sodium is produced and potassium is retained.

In Addison's Disease

An Addisonian on a high sodium intake, in the absence of mineralo-corticoid administration, demonstrates no alteration of sodium and potassium metabolism when given a spirolactone.

In both Addisonians and normal subjects who received mineralo-corticoids, the spirolactones blocked these effects.

Using stop-flow analysis the pattern of sodium reabsorption along the renal tubule in normal and adrenalectomized animals was studied.[15,16] In this technique, the ureter is occluded abruptly during an osmotic diuresis. It is assumed that the normal activity occurring at the tubular sites continues during the obstruction. The clamp is then released abruptly and serial samples are collected.

The administration of a mineralo-corticoid to patients with Addison's disease produces a decrease in urinary sodium, chloride and volume with an increase in urinary potassium, ammonia, phosphate and titreable acidity. If a spirolactone is given concomitant with the administration of the mineralo-corticoid, the reverse occurs. These studies, in essence, confirm the experiences reported in adrenalectomized animals.

In this same study a spirolactone was administered to normal subjects on either normal or high sodium diets. Only excess sodium was observed in the urine as a consequence. However, when sodium restriction was followed, the subject's aldosterone production increased and the administration of the spirolactone caused a much larger diuresis of sodium.[2,17]

One of the basic concepts of the action of an aldosterone antagonist involves the affinity for the antagonist by the target tissue. It would therefore be theoretically possible to administer a compound which in effect would possess aldosterone activity to a very small degree with at least equal affinity for the target tissue. If this were the case, the target tissue receptors could be almost completely bound to the very weak aldosterone-like drug, leaving little if any of the site for the binding of the more potent aldosterone.

When a spirolactone was administered in very large doses to adrenalectomized rats not receiving a mineralo-corticoid, a weak though perceptible mineralo-corticoid activity was demonstrated in terms of sodium retention. There was no evidence of increased potassium excretion. This activity is too weak to be recognized unless huge doses are administered.

Additional evidence that the 17-spirolactones compete with aldosterone on the renal tubular exchange of sodium and potassium was demonstrated by infusing aldosterone and a spirolactone into normal subjects.[18]

Combined Results

When aldosterone was infused by itself the characteristic response was produced. However, when one gram of a spirolactone was administered intravenously and concomitantly no significant alterations were seen. When the combination of aldosterone and a spirolactone were administered simultaneously intravenously, the renal effcts of aldosterone were blocked at a specific dosage ratio which in this instance was 1:1000 (one unit of aldosterone per thousand units of the spirolactone.) Using other spirolactones the ratio necessary to produce this effect will be altered.

Additional evidence of the peripheral antagonism existing between the 17-spirolactones and aldosterone was shown by their effects on the salivary sodium to potassium ratio. Mineralocorticoids normally cause a decrease in this ratio and the 17-spirolactones caused an increase in this same ratio.[19]

As stated previously aldosterone is an important factor in the development of ascites and edema in hepatic cirrhosis, and perhaps even more important in cirrhotics with resistant ascites and edema. In the latter state, the conventional diuretics which, in the main, act upon the proximal tubular mechanisms are incapable of any further improvement of the clinical state without the use of additional agents. Approximately one-third of the patients with this syn-

drome will respond to spirolactone as the sole diuretic agent.

The explanation of this observation rests upon the fact that aldosterone is present in significantly increased amounts in this state, thereby acting to negate at the distal convoluted tubule any diuretic action at the proximal tubular site.

If on the other hand the patient is reabsorbing massive amounts of sodium and water at the proximal tubular site, aldosterone blocking cannot be expected to produce a diuretic response.

Most of the potassium loss that is seen with conventional diuretic therapy probably occurs as a result of the tremendous sodium load arriving at the distal tubule where aldosterone causes the sodium to be exchanged for potassium.

When spirolactone is administered by itself, one can see an increase in sodium excretion without any effect on the urinary potassium. The thiazide on the other hand produces an increased sodium and potassium excretion. In some instances, the potassium excretion falls as a result of a drop in serum potassium. When the spirolactone is then given concomitantly with the thiazide, sodium excretion is high and there is a prompt fall in potassium excretion.

Response of Patients

To return to our previous point, then approximately one-third of the patients refractory to mercurials and thiazides with hepatic cirrhosis and ascites will respond satisfactorily to a spirolactone when given alone. Approximatly one-third will require the simultaneous use of a spirolactone and a conventional diuretic. The remaining one-third will require a "shotgun" type of therapeutic approach which will be discussed in a later paper. It should be noted, however, that all patients who respond to a spirolactone alone will have a greater diuresis if a thiazide or mercurial is added to the treatment.

I think it is important to emphasize the fact that spirolactones, when employed in edematous situations, are most effective in patients with cirrhosis, slightly less effective in the nephrotic syndrome and the most difficult to treat are patients with advanced congestive heart failure.

Approximately one-third of the refractory patients treated with spirolactones have developed hyponatremia, or have experienced a further decline in a previously low serum sodium during diuresis and when edema and ascites were still present.

These patients have a high total body sodium and the hyponatremia merely represents a dilutional syndrome, due in all probability to a defect in water excretion that has not been corrected with the therapy given. This can be effectively combated by restricting the patient's fluid intake to one liter per day, and if necessary adding glucocorticoids and/or osmotic diuretics.

It has also become necessary to recognize that a true low salt syndrome can be achieved with the use of intensive diuretic therapy. It is extremely important to be able to differentiate this from the dilutional syndrome since sodium must be administered in the true low salt syndrome and sodium is contraindicated in the dilutional syndrome.

Hyperkalemia has been observed in patients receiving combined spirolactone and thiazide therapy when supplemental potassium was given. It is felt that it is contraindicated to give potassium to a patient who is receiving combined therapy with spirolactones and proximal tubular diuretics.

A significant rise in the blood urea nitrogen occasionally develops. In all probability this is the result of a reduced blood volume with prerenal azotemia. This disappears if the diuretics are stopped for a few days. Sedation may be seen on rare occasions as a result of spirolactone therapy.

A drug rash has been seen in five patients receiving a spirolactone. This has been the only direct toxic effect noted, and in these instances was not serious. The rash promptly subsided upon withdrawal of therapy.

SUMMARY

The spirolactones are aldosterone antagonists and in all probability operate by effectively blocking the chief target organ of aldosterone: the distal renal tubular cell.

The effects of aldosterone and the spirolactones are directly opposite to one another, the spirolactone being effective only when aldosterone is present. In addition to requiring aldosterone to perform effectively, the spirolactones also require the delivery of an adequate amount of sodium and water to the distal tubular site, since this inhibition is one of resorption and exchange and is not a stimulation of excretion.

Finally, if one bears in mind the pathophysi-

ology of the edematous state, the intelligent and effective use of spirolactones becomes a relatively simple application of clinical pharmacology.

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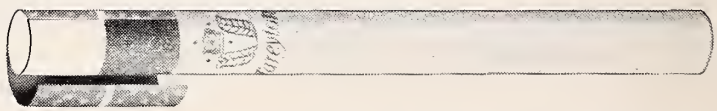
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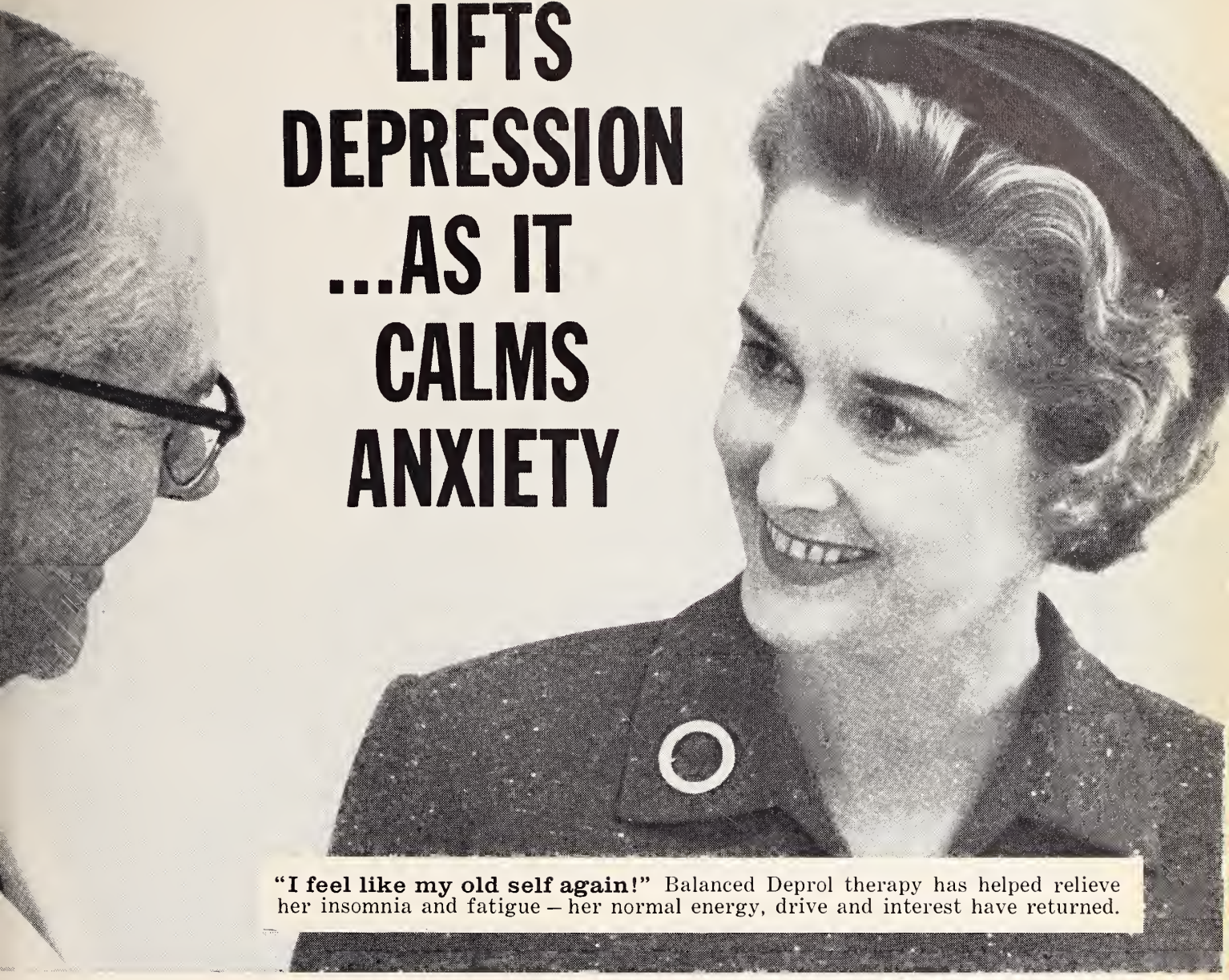
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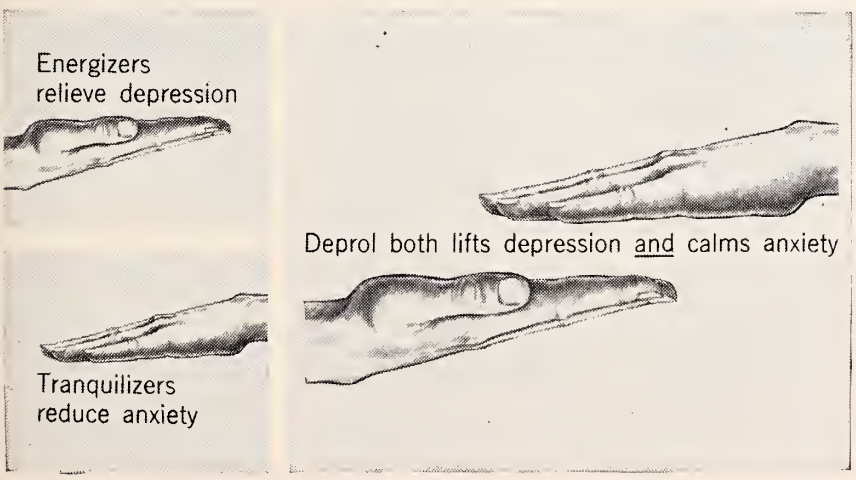
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Medical Society of the United States and Mexico

Program – Annual Meeting

As the readers will recall from the last report published in Arizona Medicine, this society will hold its meeting at the Hotel Tidelands in Tucson on December 5, 6, and 7, 1962.

The program, still in tentative shape, is as follows:

Wednesday, December 5 — Hotel Tidelands

9:00 a.m. Opening ceremonies to which the Governors of Arizona and Sonora have been invited.

10:00 a.m Iron deficiency anemias – Ralph A. Jackson, M.D.

10:20 a.m. Chemotherapy of cancer – Mario Paredes, M.D.

10:40 a.m. Pediatrics Symposium
Moderator: Hugh C. Thompson, M.D.
Participants: W. E. Ahrens, M.D.; Oscar Navarro Franco, M.D.; Horacio Padilla, M.D.; E. Henry Running, M.D.

11:45 a.m. Amoebic abscesses in children – Oscar Navarro Franco, M.D.

1:00 p.m. Luncheon, Hotel Tidelands, for members. A motion picture on the recent poliomyelitis innoculation campaign in the City of Phoenix will be shown and commented on by Hugh C. Thompson, M.D.

6:00 p.m. Cocktails and buffet supper at the Saddle and Sirloin restaurant.

Registration will be feasible during the entire day in the lobby of the Tidelands Hotel beginning at 8:30 a.m. The registration fee has not yet been fixed.

Thursday, December 6 — St. Mary's Hospital

9:30 a.m. Therapeutic and diagnostic use of radioisotopes—S. V. Hilts, M.D.

9:45 a.m. The use of 19-norsteroids in dysmenorrhea – Francisco Alfaro Baeza, M.D.

10:00 a.m. Gynecology panel: Thoughts on abnormal bleeding in the pre-menopausal and the menopausal woman"
Moderator: Carlos Collignon, M.D.
Participants: H. J. Zettleman, M.D.; George Fraser, M.D.; D. Gallo, M.D.; Francisco Alfaro Baeza, M.D.; Charles J. Newcomb, M.D.

10:45 a.m. Thirty years experience in cesarean section at Evanston Hospital – H. J. Zettleman, M.D.

11:00 a.m. The demonstration of coronary circulation by angiographic techniques – H. Garcia, M.D.
Discussion: R. Anderson, M.D.

11:30 a.m. Symposium on renal hypertension
Moderator: M. A. Carreras, M.D.
Participants: Joaquin Baeza, M.D.; E. Gonzales Murguia, M.D.; Kenneth Johnson, M.D.; Ross L. Magee, M.D.; Walter T. Hileman, M.D.; Carlos Palomera, M.D.

12:15 p.m. Visit to the artificial kidney. Attempts will be made to keep this preparation running most of the mornings. The following physicians are in charge of this demonstration: Wesley A. Soland, M.D.; Roland V. Murphy, M.D.; Richard L. Dexter, M.D.; Ross L. Magee, M.D.

1:30 p.m. Dinner with the ladies, at the Old Pueblo Club.

Friday, December 7 — Tucson Medical Center

9:30 a.m.	Pulmonary function tests by Dr. Thomas P. K. Lim, M.D.
9:45 a.m.	Symposium on emphysema and cor pulmonale. **Moderator:** G. Madrid, M.D. **Participants:** Carlos Ayala, M.D.; A. Carbajal, M.D.; Thomas P. K. Lim ,M.D.; André J. Bruwer, M.D.
10:30 a.m.	Unusual shadows in chest radiographs – André J. Bruwer, M.D.
10:45 a.m.	Visit to the Cardiopulmonary Laboratory. Visit to the Radioisotope Laboratory. Dr. Lim and Dr. Hilts, respectively, will be in charge.
11:15 a.m.	Symposium on biliary surgery. **Moderator:** Ignacio Chavez, M.D. **Participants:** R. Felix, M.D.; E. Contreras Reyna, M.D.; W. R. Manning, M.D.; F. Cagiola, M.D.
7:00 p.m.	Dinner-dance at the Hotel Tidelands.

The system of simultaneous bilingual translation through individual transistors which were so successfully used in Hermosillo last year will again be employed.

Very shortly the members will receive additional information on this meeting and a registration blank.

The number and quality of Mexican participants in the above program that we have been able to obtain is truly outstanding. Many of them are on the faculty of the medical school at The University of Guadalajara.

We trust that the system of round tables and symposia prevailing over the emphasis on individual papers will prove as successful as it did at the last meeting in encouraging a more lively scientific exchange and better understanding.

We anticipate a large American turnout. We trust that each and every American participant at this meeting will consider himself a host to our welcome Mexican colleagues expected from below the border.

Juan E. Fonseca, M.D.



from boutonneuse fever in Africa

Whether treating boutonneuse fever, bronchopneumonia, or a host of other infections, physicians throughout the world continue to rely on the effectiveness, relative safety, and exceptional toleration of Terramycin in broad-spectrum antibiotic therapy. This continuing confidence is based upon thousands of published clinical reports and successful experience in millions of patients. *The next infection you see will more than likely be "Terra-responsive."*



IN BRIEF The dependability of Terramycin in daily practice is based upon its broad range of antimicrobial effectiveness, excellent toleration, and low toxicity. As with other broad-spectrum antibiotics, overgrowth of nonsusceptible organisms may develop. If this occurs, discontinue the medication and institute appropriate specific therapy as indicated by susceptibility testing. Glossitis and allergic reactions to Terramycin are rare. For complete information on Terramycin dosage, administration, and precautions, consult package insert before using.

More detailed professional information available on request.

Boutonneuse fever is a tick-borne, acute, febrile disease often affecting children. The bite site becomes a small, necrotic ulcer. A striking macular or maculopapular eruption develops on the trunk, palms and soles. Onset is sudden, with chills, high fever, violent headache and lassitude. The high temperature—up to 103° F.—characteristic of both boutonneuse fever and bronchopneumonia, drops rapidly following initiation of Terramycin therapy.

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PRESCRIBING INFORMATION

INDICATIONS AND DOSAGE: For the following indications, the recommended daily dosage is one or two 'Dexedrine' *Spansule* capsules, usually taken in the morning: control of appetite in weight reduction; depressive states; alcoholism. In narcolepsy, the recommended daily dosage is up to 50 mg. of 'Dexedrine' by 'Spansule' capsule on arising.

SIDE EFFECTS: Insomnia, excitability and increased motor activity are infrequent and ordinarily mild.

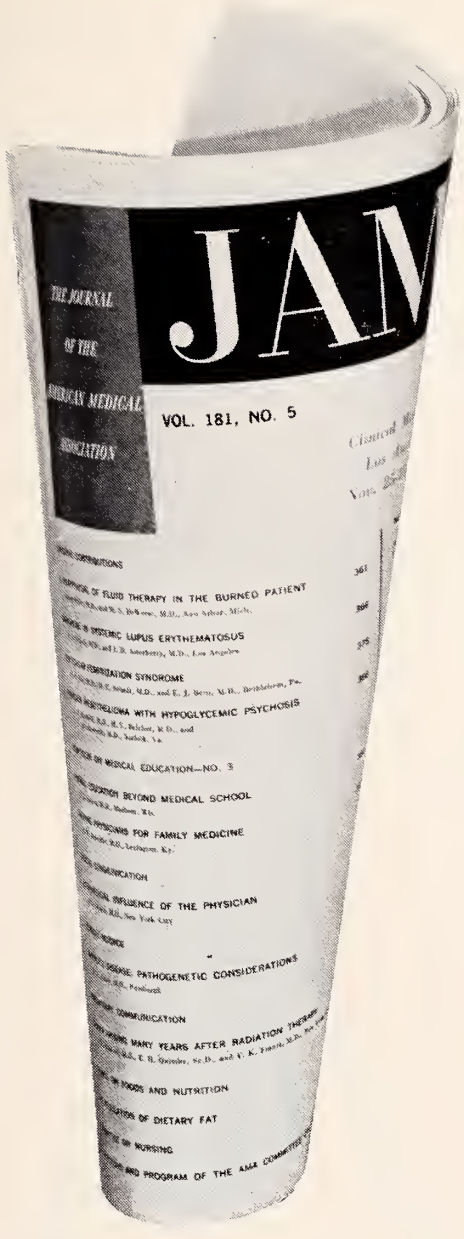
CAUTIONS: Should be used with caution in patients hypersensitive to sympathomimetic compounds; in cases of coronary or cardiovascular disease; and in the presence of severe hypertension.

CONTRAINDICATIONS: Hyperexcitability; agitated pre-psychotic states.

SUPPLIED: 5 mg., 10 mg. and 15 mg., in bottles of 30. (Each capsule contains dextro amphetamine sulfate, 5 mg., 10 mg., or 15 mg.)

Prescribing information adopted January 1961.

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Restrictions on the Use of Laboratory Animals for Research

One characteristic of the antivivisectionist movement is its persistence. Determined efforts to prevent the use of animals in experimental research have been made by organized groups for well over half a century.

It would appear that these people are far more interested in the welfare of the lower animals than they are in the well-being of their fellow men, since it is well known that many of our modern measures to save lives and relieve suffering would not have been discovered without the use of animals in research laboratories.

One has only to mention such diseases as diphtheria, diabetes and pernicious anemia to point out the great contribution of laboratory animals to our present state of knowledge and health.

One of the current moves of the antivivisectionists is expressed in Senate Bill 3570 proposed by eleven United States Senators. This bill would license every scientist who might work under any federal grant or contract.

Laboratories in which animal research were to be conducted would be inspected and issued "certificates of compliance." Research plans would have to be submitted to the Secretary of Health, Education, and Welfare for approval. Detailed annual reports would have to be made by each licensee covering all experiments performed in which animals were used during the year.

The National Institutes of Health would be assigned police duties. Representatives of the secretary would be given access to the research laboratories at times specified by the secretary in accordance with rules and regulations issued by him.

According to the wording of this bill, the use of live vertebrate animals is permitted for medical and military research only. No experimentation for the pursuit of knowledge per se is provided for. And no authorization for the use of

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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words.

4. Read and re-read the manuscrapt several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Exclusive Publication — Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

7. Reprints will be supplied to the author at printing cost.

Editorials of Arizona Medicine are the opinions of the authors and do not necessarily represent the official stand of The Arizona Medical Association. The opinions of the Board of Directors may be sought in the published proceedings of that body.

animals even in agricultural, veterinary, or animal husbandry work is given.

Perhaps the worst part of this bill is that it would put in the hands of the Secretary of Health, Education and Welfare complete power over the character of animal experimentation that could be performed in this country under federal subsidy, which now means most of such work.

The regulations themselves outlined in the bill for the care of animals are not objectionable. They indicate what every good laboratory director insists upon now.

The objectionable features are the procedures required: advance approval of experimental plans by the Department of Health, Education and Welfare; burdensome record keeping; annual or more frequent reports; additional costs for the government and for every laboratory involved; and the general nuisance of establishing and living under a new and unnecessary amount of red tape.

Senate Bill 3570 is very similar to the laws passed in Germany and in England that have proved so restrictive to the free pursuit of research investigations in those countries.

A recent bulletin of the National Society for Medical Research points out that the mail being received by congressmen about this bill was running 20 to 1 in favor of this type of legislation.

Organized minorities usually do make the loudest noises. In this case it is important that all thoughtful people interested in the continuance of animal research on a free and unrestricted basis make their views known to their representatives in congress.

Hugh H. Smith, M.D.

West Gets 14.9% of Defense Student Loans

The Division of Higher Education of the U. S. Office of Education recently released data on the operation of the National Defense Student Loan Program from its beginning in February, 1959 through June 30, 1961.

Of the 238,092 students who received loans, 32,484, or 13.6%, were enrolled in colleges and universities in the WICHE states. In the fall of 1961, college enrollment in the WICHE states represented 20.9% of the total college enrollment.

A total of $19,217,582 in federal funds was allotted to western schools, which contributed an additional $2,163,780 to the loan program. Schools in the WICHE region received 14.9% of all federal contributions. California, Washington, Colorado, and Oregon, in that order, received the most funds.

Record of NDEA Student Loan Program in 13 Western States

State	Number of Institutions	Contributions Federal	Institutional	Students
Alaska	2	$ 28,597	$ 3,669	68
Arizona	6	1,014,444	113,730	1,192
California	98	9,821,477	1,093,427	15,071
Colorado	18	1,865,743	209,721	3,307
Hawaii	3	154,966	17,218	301
Idaho	7	473,637	52,670	995
Montana	9	470,965	52,413	976
Nevada	1	78,661	8,839	113
New Mexico	9	663,301	73,701	1,652
Oregon	19	1,442,717	162,592	2,686
Utah	9	671,021	93,274	1,322
Washington	19	2,298,702	256,594	4,545
Wyoming	3	233,351	25,932	256
Total	203	$ 19,217,582	$ 2,163,780	32,484
U. S. Totals	1,410	$128,335,829	$14,515,418	238,092

News Notes
Western Interstate Commission
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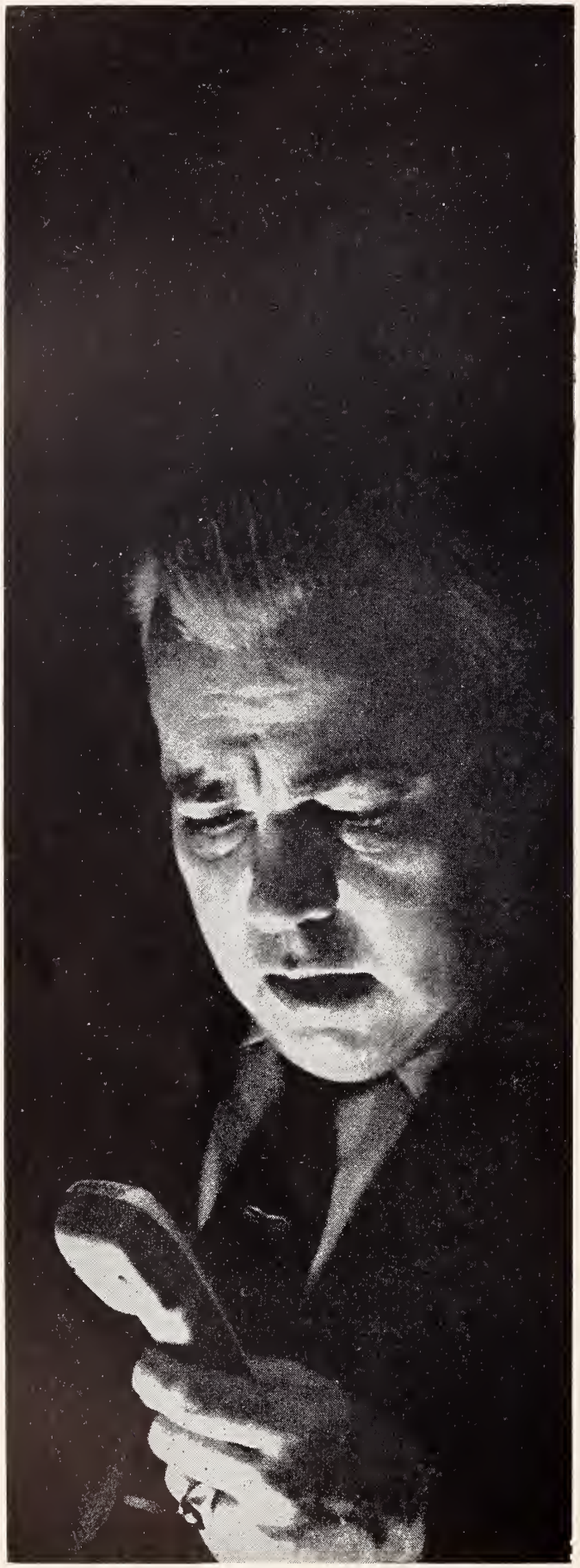
The usual dosage for infants and for children under twenty-five pounds is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. For adults and for children over fifty pounds, the usual dosage is 250 mg. every six hours. In more severe or deep-seated infections, these dosages may be doubled. Ilosone is available in three convenient forms: Pulvules®—125 and 250 mg.*; Oral Suspension—125 mg.* per 5-cc. teaspoonful; and Drops—5 mg.* per drop, with dropper calibrated at 25 and 50 mg.

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New Isuprel Compound Elixir alleviates symptoms...prolongs relief in chronic bronchitis and emphysema.

Each good-tasting vanilla-flavored tablespoon (15 cc.) contains:

Isuprel® (brand of isoproterenol) HCl	2.5 mg.
Ephedrine sulfate	12 mg.
Theophylline	45 mg.
Potassium iodide	150 mg.
Luminal® (brand of phenobarbital)	6 mg.
Alcohol	19%

Adult Dose: 2 tablespoons 3 or 4 times daily.

How Supplied: Isuprel Compound Elixir is supplied in bottles of 16 fl. oz.

Before prescribing be sure to consult Winthrop's literature for additional information about dosage, possible side effects and contraindications.

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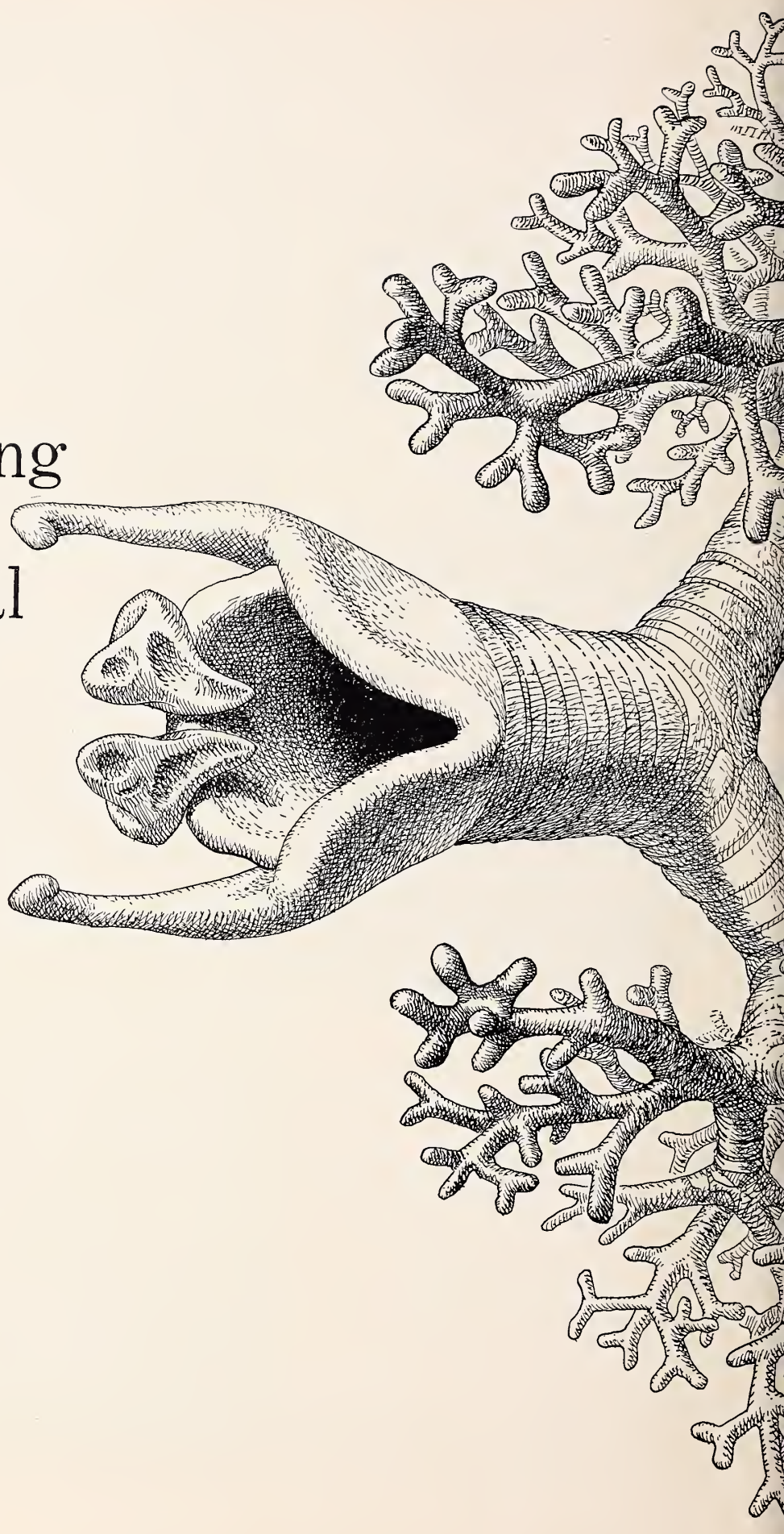
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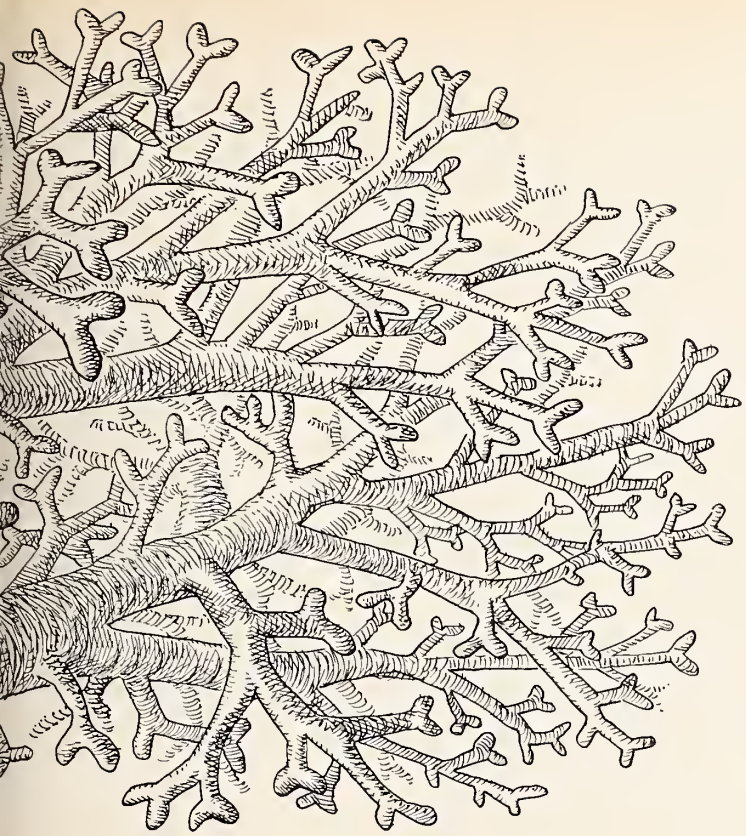
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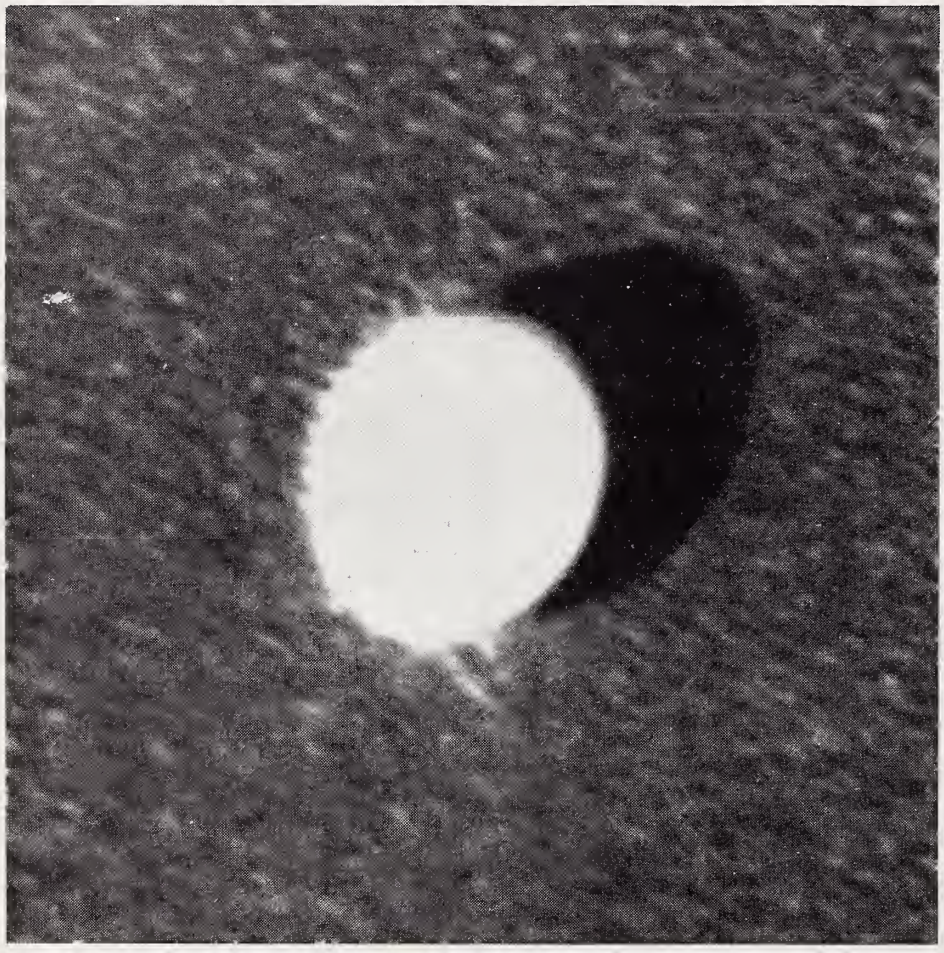


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Inhibiting effects of smoke constituents on Ciliary Function

●

Phenolic components in the smoke from various types of cigarettes

●

Effects of selective filtration of Phenol by an improved Micronite Filter treated with PFA-17

Introduction of the KENT Micronite filter in 1952 marked a notable achievement of Lorillard research and led to widespread consumer preference for filter cigarettes. Continuing scientific studies conducted at Lorillard Research Laboratories encompass rigorous investigation of cigarette smoke composition, modification of smoke by effective filtration, and effects of smoke per se as well as of its specific constituents. The most recent outcome of such research is an improved KENT Micronite filter with enhanced ability to remove selectively specific undesirable components of smoke. A brief summary of research which led to this development is given below for the information of those who may be interested.

Studies of Effects of Smoke on Ciliary Function

Various materials including cigarette smoke have been reported to inhibit ciliary function. Cilia are microscopic hairs projecting from specialized cells found in a wide variety of organisms. Cilia beat in rhythmic

unison to create wave-like motion. The effect of these sweeping movements is to propel surrounding fluids steadily in one direction. In man, as in other animals, cilia of the respiratory tract are associated with secretory cells which provide a thin film of mucus that is kept flowing by ciliary action. Inhaled foreign particles become trapped in the mucus or on its surface. The biological function of respiratory cilia is to transport foreign particles away from the lung area on steadily flowing mucus currents.

Ciliated cells of various organisms are physiologically quite similar. Ciliated tissues from the mouth and esophagus of the frog have traditionally been used in studies of ciliary function. Lorillard researchers developed a carefully standardized technique for study of ciliated tissues of the frog exposed to various environmental conditions, such as cigarette smoke.

In these studies, the tissue preparation is placed in the exposure chamber of a specially designed instrument through which laboratory air or smoke is drawn in calibrated volumes. The tissue is first exposed to laboratory air and at the end of a 30-minute equilibration period is transferred to a humidified observation chamber and placed under a microscope at 30x magnification. Fine carbon particles placed at one end of the tissue flow toward the opposite end and give a visual determination of the rate of mucus flow, an index of ciliary action. The time required for particles to flow 2.5 mm. is recorded as the norm or control rate. The tissue is then exposed to measured puffs from a test cigarette and again observed under a microscope to measure the rate of mucus flow after exposure. Comparison of the control rate with the exposure rate of mucus flow gives a measurement of the inhibiting effect of smoke on ciliary function.

Accurate Analysis of Phenol Content of Smoke

Numerous investigators have reported the presence of phenolic compounds in cigarette smoke. Lorillard researchers have studied phenol and other smoke constituents for a number of years. This research was greatly accelerated in 1960 when Lorillard scientists perfected a rapid, accurate method for quantitative measurement of phenol in smoke, employing gas chromatography and phenol labeled with Carbon 14. A number of phenolic compounds were identified in cigarette smoke, but phenol itself was the major chemical component of the group.

Investigation established that about 80% of the phenol in smoke occurs in the particulate matter, the rest in the gaseous phase. Tests of popular cigarette brands showed marked variations in phenol content of the smoke. Unfiltered smoke contains 2 to 4 parts of phenol per thousand parts of "tar." Filtered smoke is significantly lower in phenol content, but substantial differences in screening efficiency of various filters were apparent. The range is indicated by the following table of quantitative tests on three popular brands of cigarettes:

Micrograms of Phenol per cigarette

A leading non-filter brand	105 mcg.
A leading filter brand	35 mcg.
KENT with Micronite Filter (untreated)	24 mcg.

Mechanisms of Phenol Reduction in Cigarette Smoke

Employing a rapid technique of accurate phenol analysis, and using frog tissues as sensitive test-organs, Lorillard researchers initiated comparative studies under the observation of an independent biologist of cilia-depressing effects of the smoke from various types of cigarettes. Repeated observations of rates of mucus flow in excised esophageal tissue of the frog consistently gave the same result: *the more phenol in the smoke, the greater the slowdown of mucus transport,* reflecting depression of cilia. This unexpected finding indicated that cilia depression is not a non-specific effect of smoke per se, but a reaction to a specific type of chemical compound.

Certain filters, such as the KENT Micronite filter, screened out more phenol than could be accounted for by the volume of particulate matter and gases removed. Researchers theorized that some mechanism for selective filtration of phenol probably existed, and that selective removal of phenolic irritants might be potentiated by a filter of more efficient design. A physicochemical mechanism which could make phenol accessible for selective filtration was postulated as follows:

Vapor components of smoke condense on a solid nucleus, such as a carbon particle or ash fragment in the gas stream of a burning cigarette. In the same manner, water vapor condenses on a dust particle to form a raindrop. Heterogeneous vapors condense upon a nucleus in inverse order to their volatility. The resulting spherical particle is composed of concentric strata, with the least volatile materials at the core and the most volatile substances at the surface. Phenol, a relatively volatile compound, would be expected to be concentrated on the surface of a particle and to be susceptible to easy removal by appropriate materials.

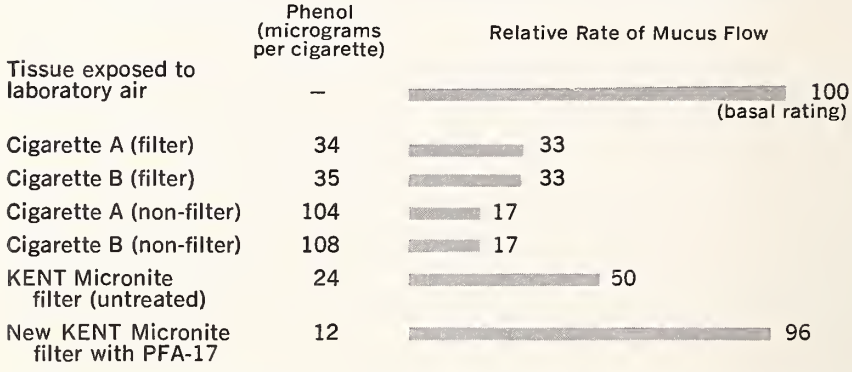
Selective Removal of Phenol by a New Micronite Filter Containing a Phenol-Combining Additive

Phenol enters readily into innumerable chemical unions. Lorillard researchers sought a compound which would combine with and capture phenol, and be safe and effective as a filter ingredient. Many compounds were studied and tested. One bearing laboratory designation PFA-17 satisfied the most exacting criteria and was immediately tested with KENT's Micronite filter.

The effectiveness on mucus flow of the new Micronite filter with PFA-17 compared with other brands is shown on the following chart:

MUCUS FLOW RATE

Relationship of phenol to inhibition of ciliary function



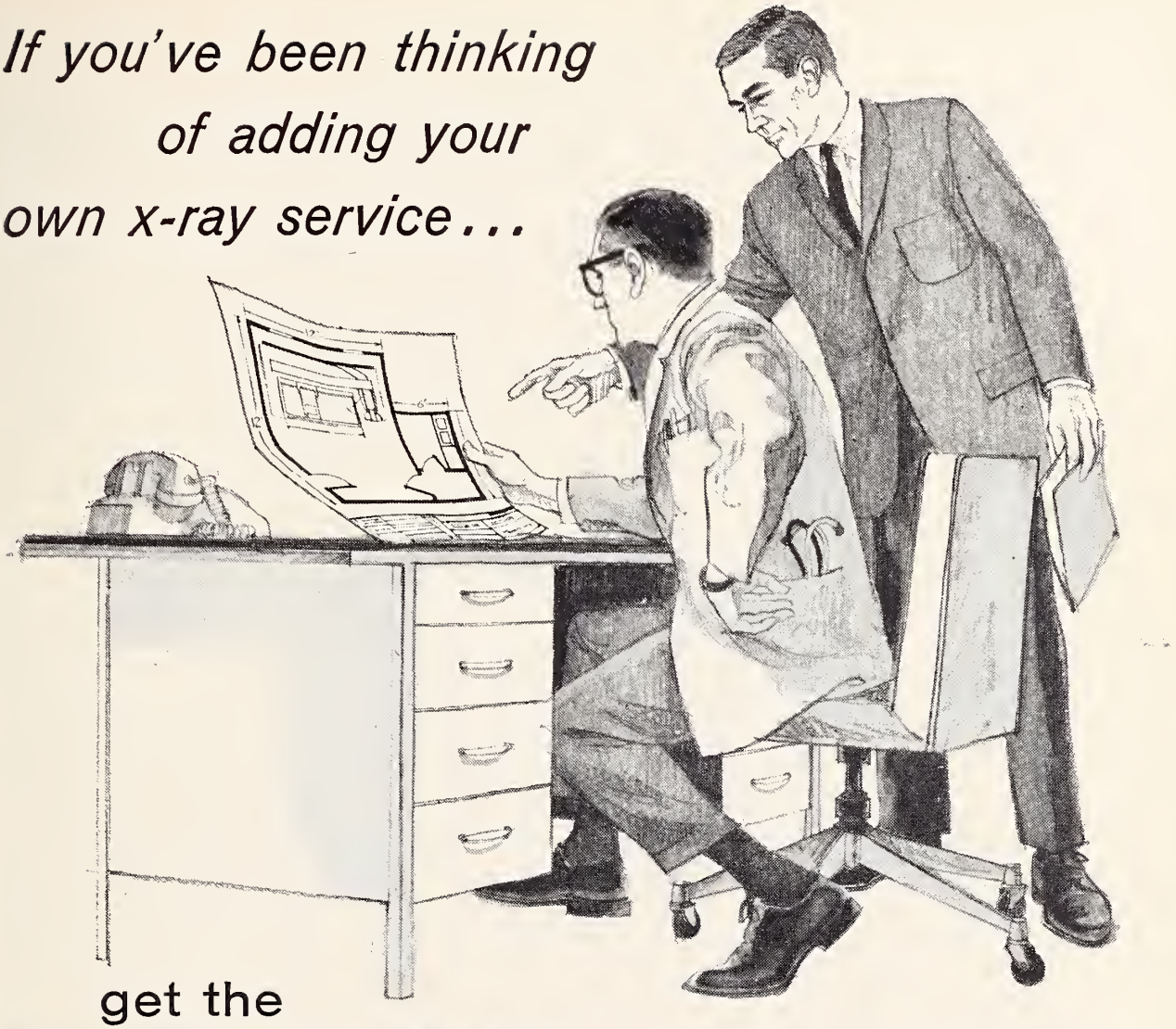
It will be seen that under the described conditions of the experiment there is a direct relationship between the reduction of cilia depression (reflected in mucus flow rate) and the reduction in phenol content of smoke. An arbitrary index rating of 100 is given to the flow rate of tissue exposed to air; decrements in flow rate following exposure to smoke are measured on this scale. The mucus flow rate of tissue exposed to smoke from the new Micronite filter is essentially the same as when cilia are exposed to laboratory air. Under identical conditions, exposure to smoke of a leading filter cigarette results in an approximate 67% slowdown of mucus flow, and exposure to a leading non-filter cigarette results in an 83% slowdown.

Lorillard research has established that phenol is the major constituent of the phenolic group of compounds in cigarette smoke which depress ciliary propelled mucus flow. A highly effective method of selective filtration of phenols by addition of a phenol-combining agent to an acetate filter is reported. KENT cigarettes contain the new Micronite filter with PFA-17, pursuant to Lorillard policy of continuous improvement of products through research.

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gr. ⅛ gr. ¼ gr. ½ gr. 1



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On Medicare

To the Editor:

The AMA's success in delaying the administration's expansion of Medicare to include the aged has identified our national governing body as a political force — political, like it or not. As a political body, conservative as opposed to liberal. Some say Republican as opposed to Democrat.

No less of an authority than The Wall Street Journal (7-24-62, "Doctors & Politics") has named a splinter group of the AMA, describing its relation and purpose: The American Medical Political Action Committee (AMPAC).

The voice of big business compares the AMA to the AFL-CIO, and its AMPAC to COPE (the AFL-CIO Committee on Public Education).

The time has come and none too soon for the AMA (House of Delegates, et al) to cast a sober eye at *its* program from this day hence.

We as members of a now *accredited political body* must realize that should the AMA not promptly elect to divorce itself from politics, that for all purposes the AMA and we as politicians cannot be libeled, and that we can expect no privacy, our patients no privilege. This situation will thus be as bad for the physician and patient as socialized medicine would be for the American public.

It is proposed that the House of Delegates be called in special session immediately to pass our "Hatch Act," and that the limitations thus imposed include appointive and elective members of medicine at the national level; that AMPAC be made entirely independent and self-sustaining; better yet, that it be summarily disbanded. To deny this cancer now is not enough.

As the AMA bows out of politics, certain pronouncements are in order:

American Medicine's Manifesto

Organized medicine is a participant in Medicare for the military dependents and a companion program, the Federal Employees Insurance. We have long since provided for our patients through our own insurance cooperative. This we sponsor, endorse, and have programmed from its inception. Organized medicine has also cooperated willingly and freely in the private insurance programs that function under these acts, where the government contract has been let to those private enterprises.

Medicine — organized medicine or individual private physician — does not oppose Medicare. We do not oppose private insurance.

Medicine does not oppose health and accident programs including Medicare and its expansion to include the aged. We pointed to the public need. We pioneered such programs. We were the first to recognize the value of same to our patients.

The AMA and your personal physician have only one objection to the administration's program to expand Medicare to include the aged. This is the *change* that the Department of Health, Education, and Welfare propose in their plan: that of federal operation of same, namely, *federal medicine.* This bureau wants to run us. Such objection is on a basis of our continued opposition to *state medicine,* as state medicine has always been proven as not in the interest of our patients.

We do not pose as economists or financiers or even good business men, nor are we politicians. Therefore, whether the money to pay for the expansion of Medicare to include the aged is paid for by direct taxes, prepaid, as in the social security approach or by other means such as Kerr-Mills, this determination we in the future will leave to business men to discuss, but the whims of the politician to determine.

In the word and spirit of our free system, I give you pertinent excerpts from the Oath of Hippocrates:

> *I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. May it thus therefor be granted to each of us "to enjoy life and the practice of the art, respected by all men, in all times."*

Medicine, by tradition the present American way, provides for patients' freedom in choice of physician. Such guarantees individual dignity. We participate willingly in such, we endorse same. We champion our patients', the American public's, medical freedom.

We physicians and surgeons oppose federal or state medicine today. We will oppose it or any other encroachment on our patients' rights and privileges in the future.

Norman A. Ross, M.D.

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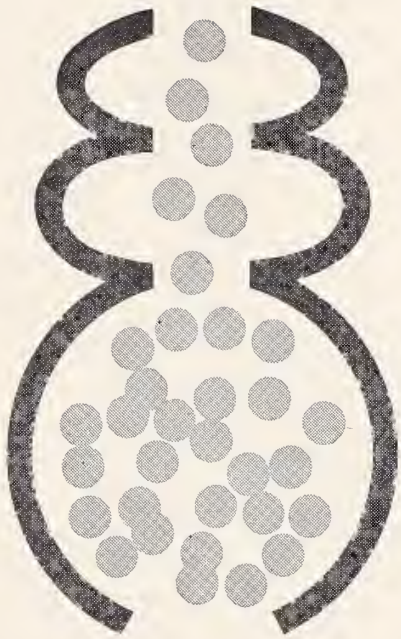
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In diarrhea this lowered propulsion permits a physiologic absorption of excess fluid, lessens frequency and fluidity of stools and gives safe, selective, symptomatic control of most diarrheas. Concurrently, it conserves electrolytes and controls cramping.

Investigators have found the antidiarrheal action of Lomotil not only "excellent"[2] but "efficacious[3] where other drugs have failed. . . ."

DOSAGE: For *adults* the recommended initial dosage is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is under control. Maintenance dosage may be as low as two tablets daily. For *children* daily dosages, in divided doses, range from 3 mg. (½ teaspoonful three times daily) for infants 3 to 6 months to 10 mg. (1 teaspoonful five times daily) for children 8 to 12 years. Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. The recommended dosage schedules should not be exceeded.

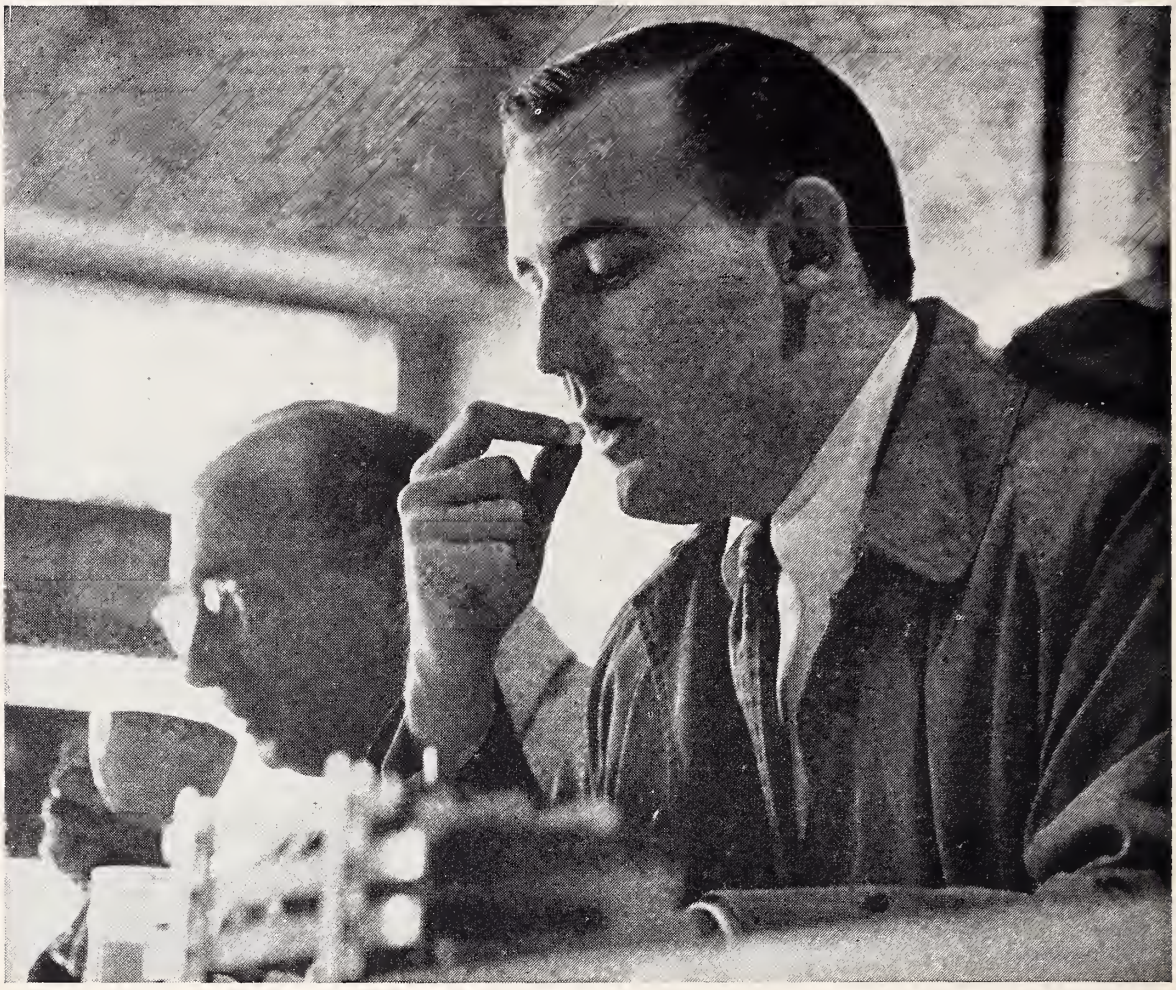
NOTE: Lomotil is an exempt narcotic preparation.

Descriptive literature and directions for use detailed in Physicians' Product Brochure No. 81 available from G. D. Searle & Co., P. O. Box 5110, Chicago 80, Illinois.

1. Demeulenaere, L.: Action du R 1132 sur le transit gastrointestinal, Acta Gastroent. Belg. 21:674-680 (Sept.-Oct.) 1958.
2. Kasich, A. M.: Treatment of Diarrhea in Irritable Colon, Including Preliminary Observations with a New Antidiarrheal Agent, Diphenoxylate Hydrochloride (Lomotil), Amer. J. Gastroent. 35:46-49 (Jan.) 1961.
3. Weingarten, B.; Weiss, J., and Siman, M.: A Clinical Evaluation of a New Antidiarrheal Agent, Amer. J. Gastroent. 35:628-633 (June) 1961.

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New Creamalin promotes ulcer healing, permits less frequent feedings because it is so long-acting. Heartburn and epigastric distress were "...easily and adequately controlled...."* New Creamalin has the therapeutic advantage of a liquid antacid with the convenience of a palatable tablet. *It does not cause constipation.*

Each new Creamalin tablet contains 320 mg. of specially processed highly reactive dried aluminum gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. Minute particles offer a vastly increased surface area.

Dosage: Gastric hyperacidity—from 2 to 4 tablets as needed. Peptic ulcer or gastritis—from 2 to 4 tablets every two to four hours. *How Supplied:* Bottles of 50, 100, 200 and 1000.

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*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

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BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

The Board of Medical Examiners of the State of Arizona, at a regular meeting held Saturday, July 21, 1962, issued certificates to practice medicine and surgery in this state to the following doctors of medicine:

Alway, James Douglas (OALR), 323 S. Lincoln, Aberdeen, South Dakota.

Anderson, Robert Milton (CaS), 1613 N. Tucson Blvd., Tucson, Arizona.

Baker, Howard Robert Jr. (Or), 435 N. Roxbury Dr., Beverly Hills, California.

Baldauf, James August (GP), 1001 N. Swan Road, Tucson, Arizona.

Bjorklund, Carl Raymond (PM-R), Mayo Clinic, Rochester, Minnesota.

Bolton, Vernon Lowell (R), 800 E. Pikes Peak Ave., Colorado Springs, Colorado.

Bronn, Jorge H. Gaytan (GP), 1140 Eighth St., Douglas, Arizona.

Brooks, Charles John (ALR), 2144 N. Marengo Ave., Altadena, California.

Cohen, Allan Ira (I-Ca), 2021 North Central Ave., Phoenix, Arizona.

Collier, Harry Allan (ObG), 750 North Country Club Rd., Tucson, Arizona.

Curtin, John William (GP), 333 West Thomas Road, Phoenix, Arizona.

De Marco, John James (ObG), 212 West 6th Street, Erie, Pennsylvania.

Dixon, Thomas Woolstone (S), Madera County Hospital, Madera, California.

Ehling, Leland Rex (Pd), 161 West Alameda, Tucson, Arizona.

Feinberg, Jonathan Frome (GP), 4243 North 24th Street, Phoenix, Arizona.

Forbes, Wilfred Wyman (GP), Magma Copper Hospital, Superior, Arizona.

Foreman, Thomas Matthew (I), 116 North Tucson Blvd., Tucson, Arizona.

Freund, Carl Joseph (I), 800 North 1st Ave., Phoenix, Arizona.

Gilbert, Donald Earl (GP), 6093 Fulton, Mayville, Michigan.

Gillespie, William Marvin (GP), 926 E. McDowell Road, Phoenix, Arizona.

Gonzalez, Mario Humberto (GP), 41 East Jackson Street, Tucson, Arizona.

Grigg, Walter Kingsley (GP), 718 E. Bethany Home Rd., Phoenix, Arizona.

Grothaus, Edward Bernard (GS), 1319 Pinkham Rd., Visalia, California.

Hanson, Harris D. (Or), 402 Avenue C West, Bismarck, North Dakota.

Hawkins, Lynn Koehler (I), 138 East Stetson Dr., Scottsdale, Arizona.

Holden, William Bourdon (P), 801 South Prudence Rd., Tucson, Arizona.

Holland, Charles Robert (OPH), 1313 North 2nd Street, Phoenix, Arizona.

Howland, Donald Everett (Anes), 1313 North 2nd Street, Phoenix, Arizona.

Hurdle, John Frank (GP), 530 West 10th Street, Mesa, Arizona.

Jabczenski, Marion Anthony (R), Maricopa County General Hospital, Phoenix, Arizona.

Jacobs, Walter Leonard Jr. (GP), P. O. Box 326, Cave Creek, Arizona.

Johnson, Mary Ellen (I), 9219 North 13th Street, Phoenix, Arizona.

Kruchek, Thomas Francis (P), 5051 North 34th St., Phoenix, Arizona.

McCauley, Thomas Edward (GP), 2919 North 56th Street, Phoenix, Arizona.

McFarland, Jack Omar (PI), 430 Morris, S.E., Grand Rapids, Michigan.

McKinstry, John William Jr. (GP), 310 West Hatcher Rd., Phoenix, Arizona.

Martinez, Evaristo Marianno (R), VAC, P. O. Box 73, Whipple, Arizona.

Mathews, William Allen (Anes), 5950 Caballo Drive, Scottsdale, Arizona.

Miller, Harry Johnson (I-Hematology), 201 9th Street, Wilmette, Illinois.

Miller, John B. (GP), 2522 East Culver St., Phoenix, Arizona.

Milliron, Joseph Wendell (GP), 216 Allegheny Ave., Kittanning, Pennsylvania.

Minnig, Darrell Roy (GS), 15 East Monroe St., Phoenix, Arizona.

Molthan, Marian Emilie (PDC), 1033 E. McDowell Road, Phoenix, Arizona.

Naifeh, George S. Jr. (GP), 4550 N. 51st Avenue, Phoenix, Arizona.

Nauth, Bernard Spencer (GP), 6108 Ridgeway Road, Edina, Minnesota.

Oakley, John Edward (GS-GP), 533 West Gurley Street, Prescott, Arizona.

Pickering, Bryant Irving (I-Endo), 550 West Thomas Road, Phoenix, Arizona.

Ruland, Maurice Boyd (P), 2533 East Fillmore, Phoenix, Arizona.

Schabarum, Bruno Karl (I), Maricopa Coun-

ty General Hospital, Phoenix, Arizona.

SCHECTER, John Anthony Arvin (Anes), 140 East Tuckey Lane, Phoenix, Arizona.

SHANAHAN, Daniel Francis (D), Box 491, USAF Hospital, Travis AFB, California.

SHIELS, Thomas Victor (I), VAC, P. O. Box 15, Whipple, Arizona.

SILVERTHORNE, John Diener (GP), Camp Verde Clinic, Camp Verde, Arizona.

TAN, Luis Sio (Pd-PDA), 1313 North 2nd St., Phoenix, Arizona.

WELSH, John Sheaff (Pd), 1710 West Wetmore Drive, Tucson, Arizona.

WOLSKI, Adam (ObG), 1328 - 20th St., N.E., Canton, Ohio.

WRIGHT, Leonard Albert (Pd), 4950 East Thomas Road, Phoenix, Arizona.

Location Opportunities In Arizona

ASHFORK — Population 700. North centrally located — Railroad center. Contact the Women's Club, Ashfork, Arizona.

BAGDAD—Population approximately 2,000. Opportunity for GP who is willing and able to do obstetrics and general surgery. Mining community. New 12-bed hospital. Excellent income possibilities with initial guarantee. Second doctor needed due to increased volume of work. Excellent housing and schools. Contact William E. Gorder, M.D., Bagdad Hospital, Bagdad, Arizona.

COOLIDGE — Excellent opportunity for a GP. Population 5,000, in addition to servicing surrounding farm area. Nearest hospital located in Florence, approximately nine miles from Coolidge. Currently five physicians serving the area. Office facilities and most equipment, including X-ray, available on rental basis from local M.D. Contact James H. Boyd, M.D., 291 West Wilson Avenue, Coolidge, Arizona.

EL MIRAGE — Population 2,000. Including the trading areas of Surprise, Youngtown, Peoria and Luke Air Base, the population is estimated at 7,000 to 8,000. Opportunity for a GP due to retirement of doctor currently serving, with the possibility of school service. Climate is excellent, warm and dry. Office facilities are available in the areas surrounding El Mirage from Glendale 9 miles to the east, and Wickenburg 35 miles to the west. Only two doctors service this community. The need for a GP and/or surgeon is very real and one should do very well. Write Mr. H. Faulkner, Town Clerk, Town of El Mirage, El Mirage, Arizona.

ELOY — Need a doctor of medicine, preferably a GP. Population of 4,000 in farming community with several small towns nearby. Located approximately midway between Phoenix and Tucson. Contact H. Howard Holmes, M.D., Eloy Medical Center, Eloy, Arizona.

GLOBE—Population 10,000. Including the mining and cattle area of Miami, Superior, Ray, Hayden, Winkleman, Payson and San Carlos, the population is estimated at 30,000. Located about two hours by car from either Tucson or Phoenix. No ENT man in the area. Ideal climate, with the best area for outdoor activities. Contact Eugene R. Rabogliatti, D.D.S., 149 South Broad Street, Globe, Arizona, or A. J. Bosse, M.D., 245 South Hill Street, Globe, Arizona.

MIAMI — Opportunity for GP — Industrial hospital staffed by seven doctors who care for personnel and families of those who work for the three principal mining companies. Community served by many mining and ranching interests. Contact R. V. Horan, M.D., Miami Inspiration Hospital, Miami, Arizona.

MORENCI — Mining community near New Mexico-Arizona border. Population 10,000. Vacancy at hospital for GP. Contact C. H. Gans, M.D., Morenci Hospital, Morenci, Arizona.

PAGE — Population growing rapidly at the site of the new Glen Canyon Dam Project. Current estimates are 6,000 to 8,000 total. Only one M.D. is now located in Page and he has facility available. Located about 90 miles north of Flagstaff. Building project is estimated to be concluded in ten years. Write Ivan W. Kazan, M.D., 6th Avenue & South Navajo, Page, Arizona, for full details.

PHOENIX — Need GP for established associate practice who will take night calls. Potential partner considered. Contact Donald L. Fusco, M.D., 225 West Hatcher Road, Phoenix, Arizona. Phone WI 3-7273.

PHOENIX — Excellent opportunity for Opthalmologist or EENT man as associate. Contact E. G. Barnet, M.D., 907 Professional Building, Phoenix, Arizona.

PHOENIX — State Department of Health, Child Development Center. Opportunity for doctor of

medicine (Pd) with three years experience. Male or female. Monthly salary $690 full time. Operation includes a doctor of medicine (Pd); two or three psychologists on a consultant basis; a psychiatric social worker; a teacher specializing in child development; and clerical people as required. Scope: Mentally retarded or emotional problems of pre-school children. Contact Mr. Thomas Golden, Arizona Merit System, 11 North 17th Avenue, Phoenix, Arizona. Phone AL 3-3189.

PHOENIX — Due to expansion of the Maternal Child Health Program there are openings for several doctors of medicine with specialties in Pediatrics or OB (2 positions) and Respiratory Diseases. Positions open include Director, Maternal Child Health Program (Health Officer III.); Clinician, Maternal Child Health Program (Health Officer II); (3) Director, Tuberculosis Control Program (H. O. IV). Approximate income is $12,000 with office space furnished. Opportunities in both Phoenix and Tucson. For more information write: Mr. Robert H. Harker, Arizona Merit System, State Capitol Building, Phoenix, Arizona.

PRESCOTT—Unopposed EENT or Opthamology practice. 95 miles from Phoenix, with year-round climate. Excellent for asthmatics. Population 15,000 and growing, 10,000 to 15,000 surrounding. Hunting and fishing area; two golf courses. Retiree collected $26,000 without surgery first full year. Can be greatly increased with surgery. Board or eligible. Contact Louis A. Packard, M.D., Box 69, Prescott, Arizona.

SAFFORD — Population 4,648, service area includes Thatcher, Pima, Ft. Thomas, Solomon, total population 14,045. General Practitioner needed for county indigents. Income $15,000 to start, with raises. Completely furnished office, 40-bed hospital (Safford Inn Hospital) available for County Pts.; excellent year-round golf course, fishing, hunting. Would like to obtain doctor as soon as possible. Would go anywhere in the state for an interview. Contact Harold C. Gates, Clerk, Board of Supervisors, Safford, or Thomas W. Jensen, M.D., District Director, 702 Eighth Avenue, Safford.

SNOWFLAKE—Located in northeastern Arizona. Seeking a doctor of medicine. Population approximately 4,000. Nearest hospital located in Show-low 19 miles from Snowflake. Increased lumber activity anticipated. Mormon L.D.S. community. Contact F. W. Erickson, D.D.S., Medical-Dental Clinic Building, Snowflake, Arizona.

ST. JOHNS — Need a doctor of medicine, preferably a GP in this Northeastern Arizona community. Population is approximately 2,000 with several other small towns in general area. About 20 miles from New Mexico in White Mountain foothills. Excellent schools. Has community 15-bed hospital, well equipped, with doctor's office and quarters in the hospital. Contact Marguerite Heap, City Clerk, City Hall, St. Johns, Arizona.

WILLCOX — GP needed. Population is approximately 2,800, with service area including San Simon, Bowie, Fort Grant, Pearce, Cochise, Elfrida and all farming and ranching communities, total population about 5,200. Located only 80 miles from Tucson. Office now available. Contact S. Antillon, M.D., 124 West Maley Street, Willcox, Arizona.

For information on opportunities in the field of industrial medicine, contact:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Arizona.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Arizona.

Ira E. Harris, M.D., Miami Inspiration Hospital, Miami, Arizona.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Arizona.

H. W. Finke, M.D., Magma Copper Company Hospital, Superior, Arizona.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Arizona.

Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Arizona.

Unused Polio Funds Given for Enterovirus Infections Research

From $25,000 to $30,000 in remaining funds from the Pima County polio innoculation program has been donated to The University of Arizona for research in the study of enterovirus infections.

A subcommittee of the Pima County Polio Steering Committee determined the disposition of the unused polio funds. Dr. Clarence H. Kuhlman, president of the Pima County Medical Society, was chairman of the committee.

Other members of the group were Dr. Philip

(*Continued on following page*)

(*Continued from preceding page*)

E. Dew, past president of the Pima County Pediatric Society; David F. Brinegar, executive editor, Arizona Daily Star; Edward E. Galyon, Tucson pharmacist; and Mrs. John L. McVean, regional vice president, Arizona Congress of Parents and Teachers.

Dr. Richard A. Harvill, president of The University of Arizona, said that The University was delighted to receive this gift. "This is an opportunity for service to the medical profession," he said.

Dr. Harvill added, "It complements the virus training program operated by The University under a grant from the National Institute of Health. We hope the laboratory will be in operation early in the fall."

Arrangements for making the unused polio funds available for research at The University of Arizona were completed with the cooperation of Dr. Hugh C. Thompson, chairman of the Pima County Polio Steering Committee, and Dr. Frederick J. Brady, director of the Pima County Health Department.

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Santa Barbara Biltmore Hotel

INDIANAPOLIS, INDIANA
Wednesday, November 7, 1962
The Marott Hotel

ANAHEIM, CALIFORNIA
Sunday, November 11, 1962
The Disneyland Hotel

KNOXVILLE, TENNESSEE
Thursday, November 15, 1962
Hotel Andrew Johnson

PHOENIX, ARIZONA
November 18, 1962
Westward Ho Hotel

NEW CITY, NEW YORK
Wednesday, November 28, 1962
Dellwood Country Club

LOS ANGELES, CALIFORNIA
November 29, 1962
Ambassador Hotel

GRAND RAPIDS, MICHIGAN
Saturday, December 1, 1962
Pantlind Hotel

NORFOLK, VIRGINIA
December 6, 1962
Golden Triangle Motor Hotel

DENVER, COLORADO
Sunday, January 13, 1963
The Cosmopolitan Hotel

FORT SMITH, ARKANSAS
Tuesday, January 15, 1963
The Holiday Inn

PORTLAND, OREGON
Thursday, January 31, 1963
The Sheraton-Portland Hotel

ANCHORAGE, ALASKA
Saturday, February 23, 1963
The Anchorage Westward Hotel

DETROIT, MICHIGAN
Wednesday, February 27, 1963
The Sheraton-Cadillac Hotel

WILMINGTON, DELAWARE
Saturday, March 9, 1963
Delaware Academy of Medicine

HUNTSVILLE, ALABAMA
Thursday, March 14, 1963
The Russel Erskine Hotel

FARGO, NORTH DAKOTA
Saturday, March 16, 1963
The Frederick Martin Hotel
(Moorhead, Minn.)

BELLINGHAM, WASHINGTON
Saturday, March 23, 1963
The Hotel Leopold

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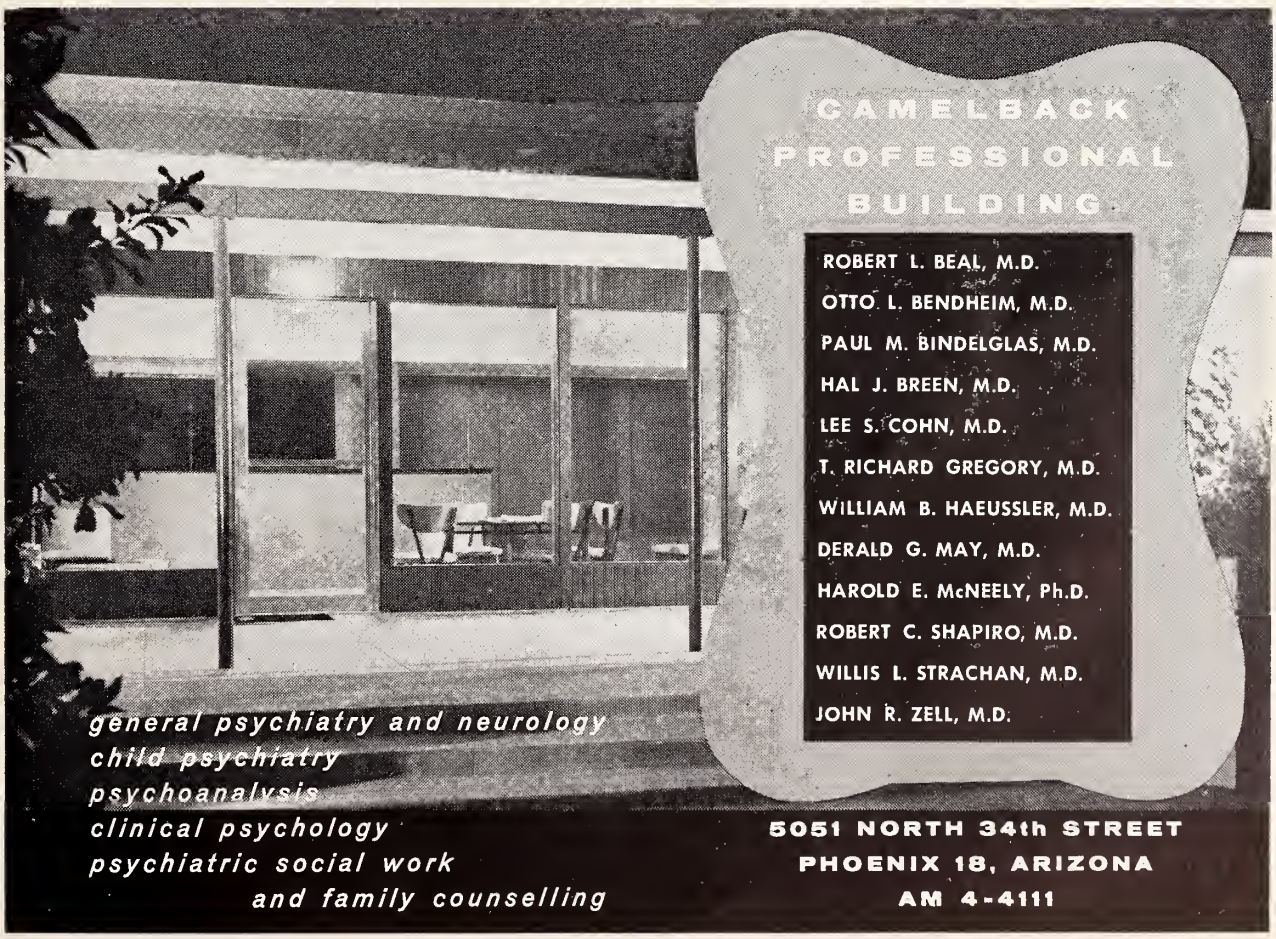
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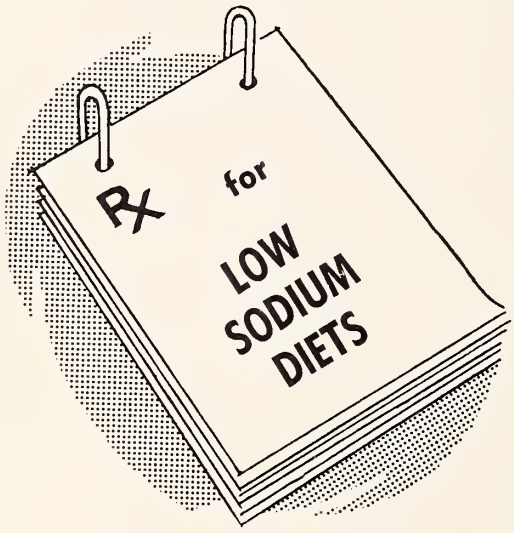
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References: (1) Malone, F. J., Jr.: *Mil. Med.* **125**:836, 1960. (2) Martin, W. J.; Nichols, D. R., & Cook, E. N.: *Proc. Staff Meet. Mayo Clin.* **34**:187, 1959. (3) Ullman, A.: *Delaware M. J.* **32**:97, 1960. (4) Petersdorf, R. G.; Hook, E. W.; Curtin, J. A., & Grossberg, S. E.: *Bull. Johns Hopkins Hosp.* **108**:48, 1961. (5) Jolliff, C. R.; Engelhard, W. E.; Ohlsen, J. R.; Heidrick, P. J., & Cain, J. A.: *Antibiotics & Chemother.* **10**: 694, 1960. (6) Lind, H. E.: *Am. J. Proctol.* **11**:392, 1960.

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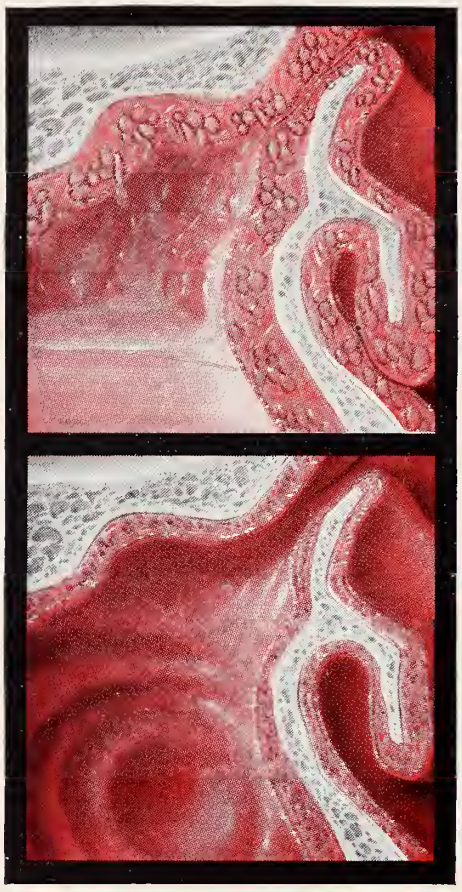
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1 Ford, R. A., and Blanchard, K. Journal Lancet 78 185, 1958.

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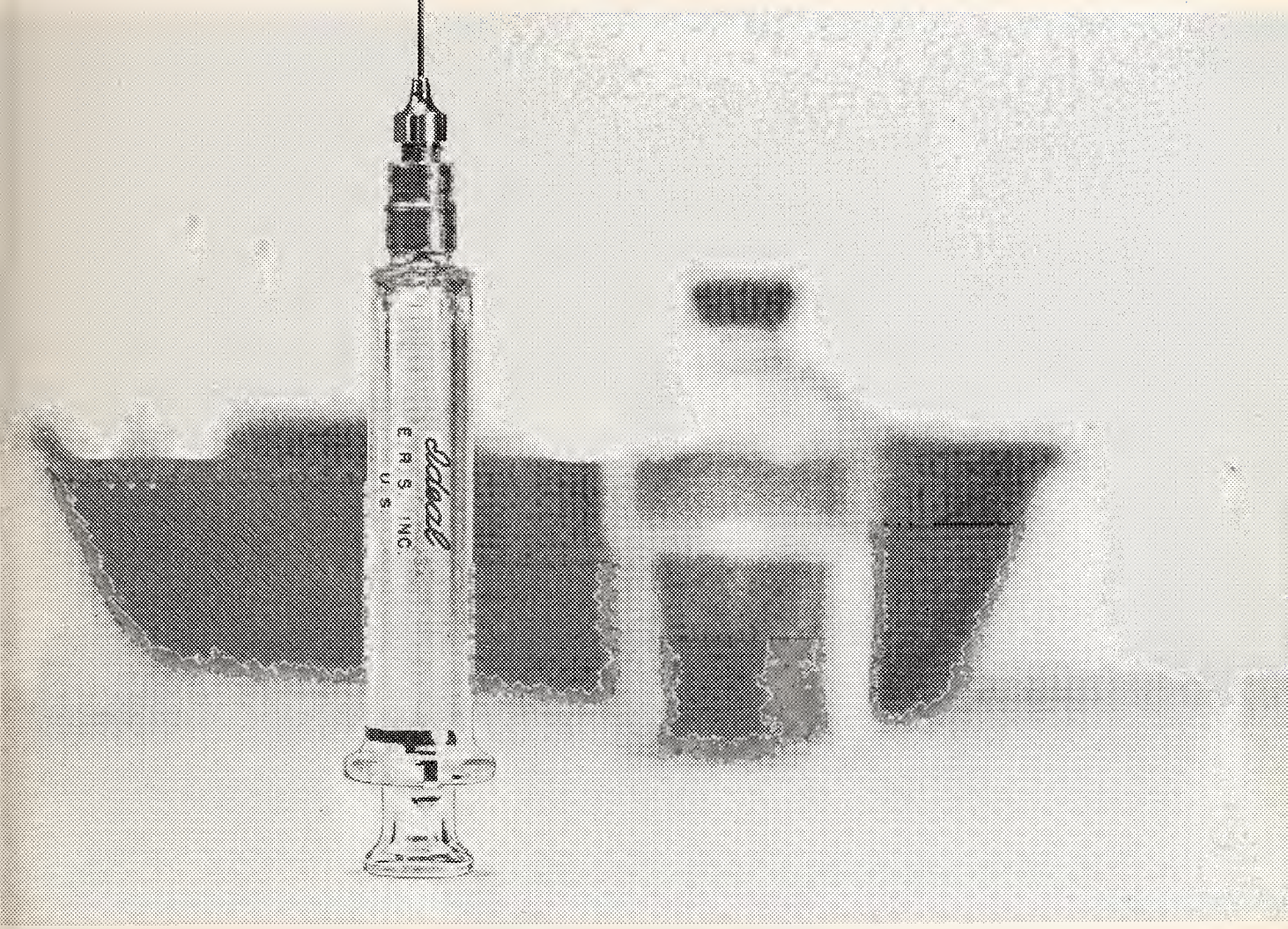
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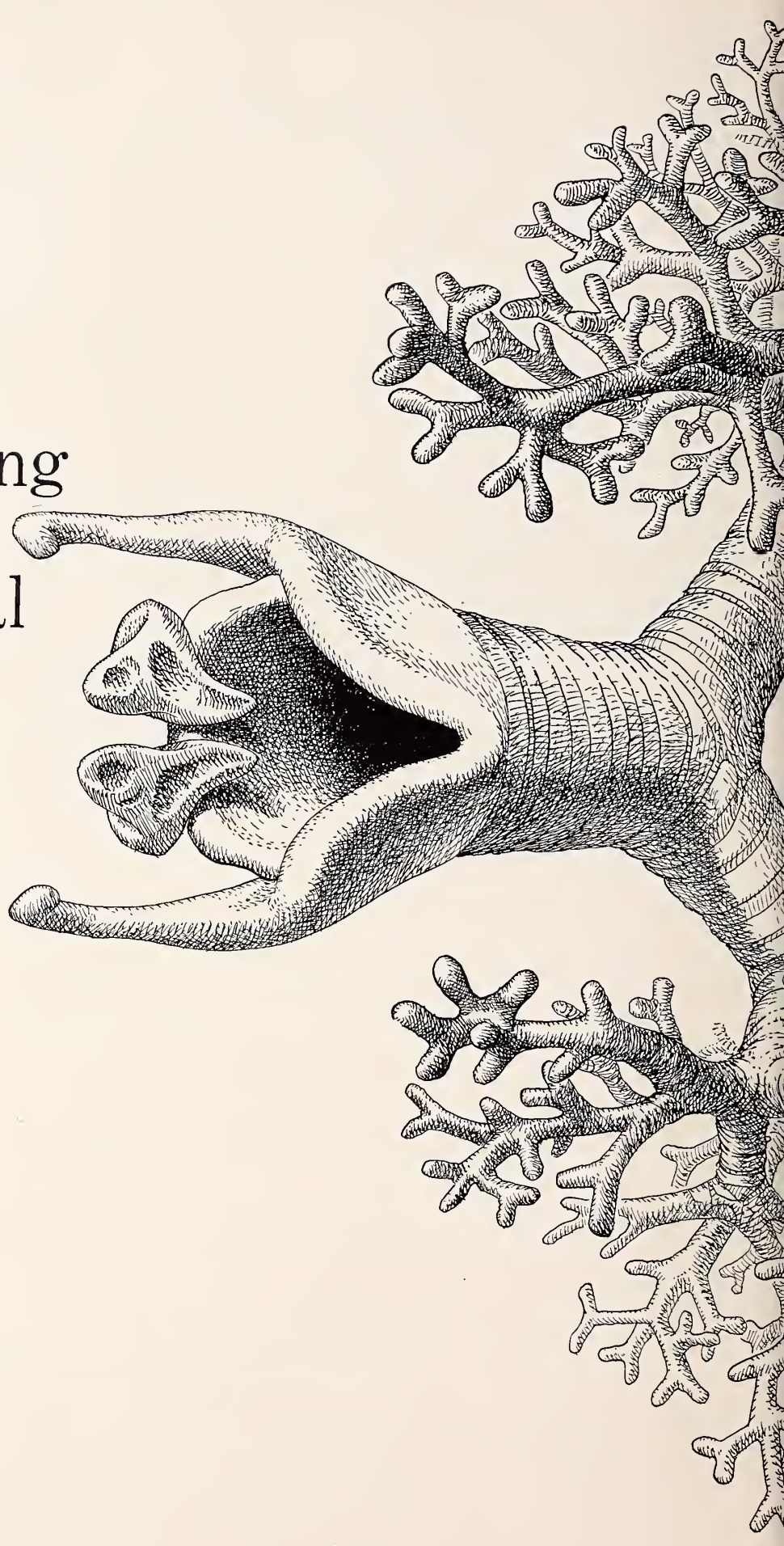
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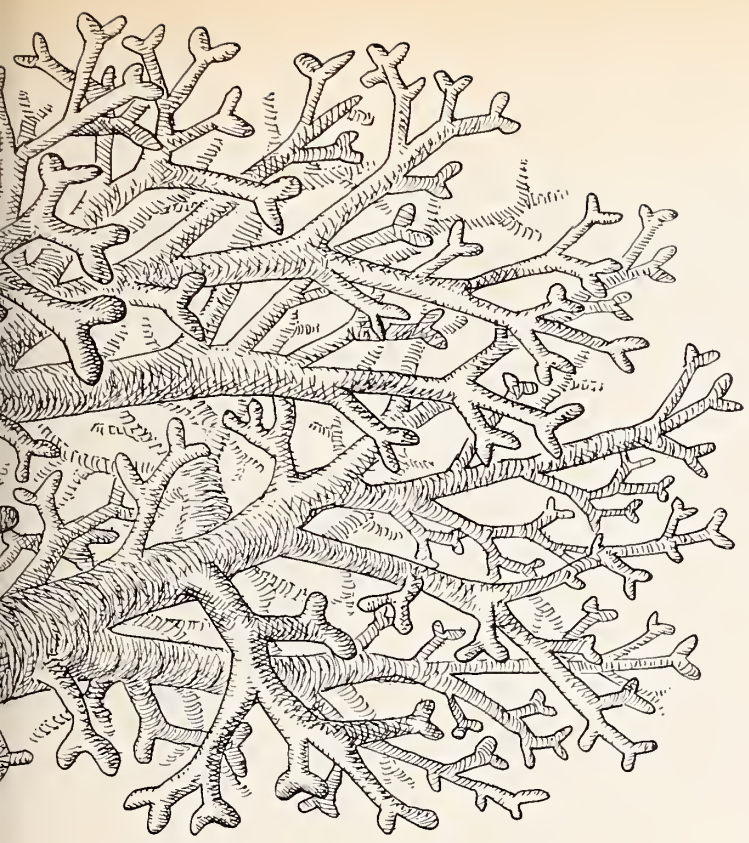
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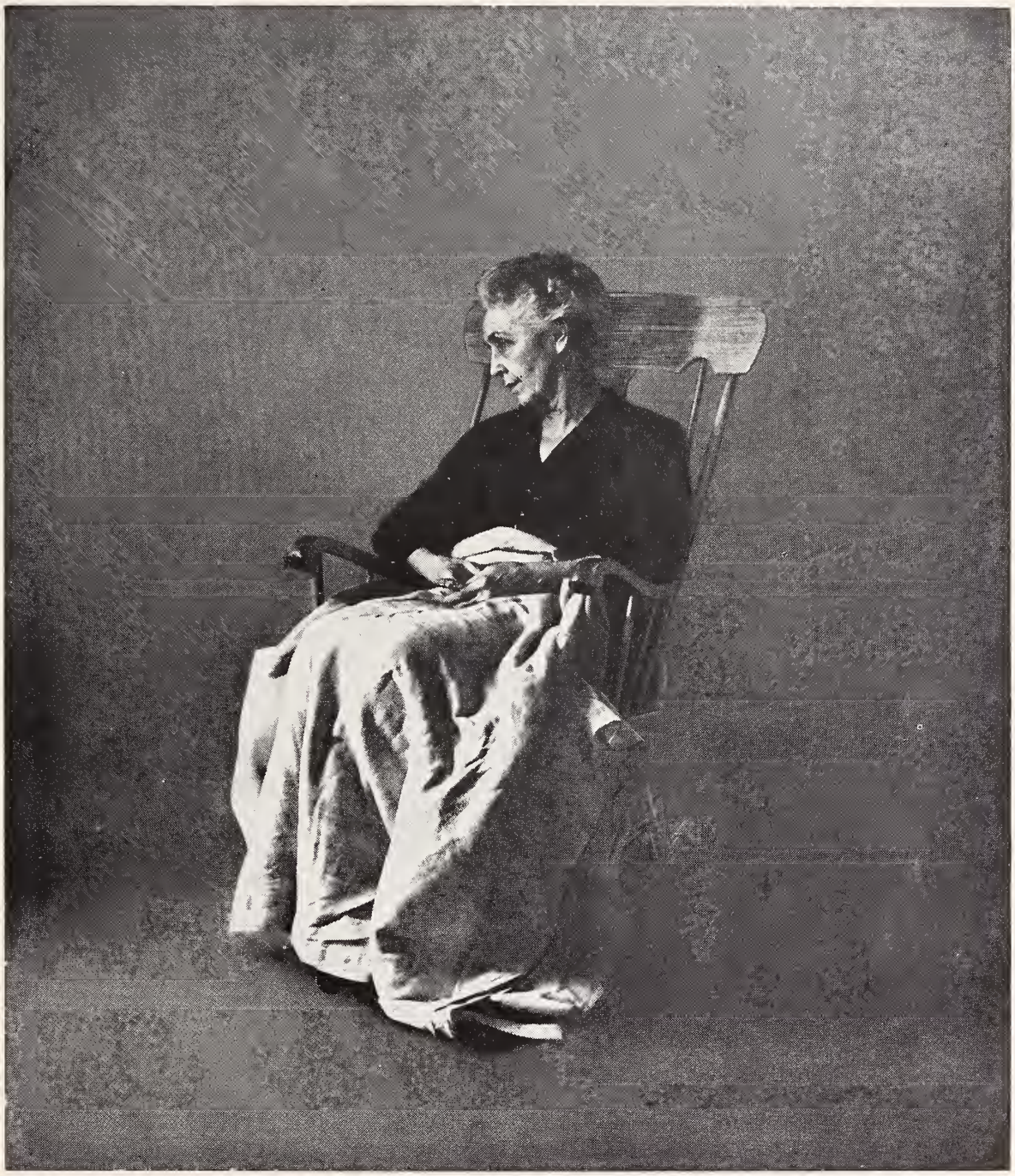


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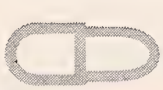
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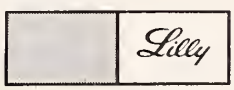
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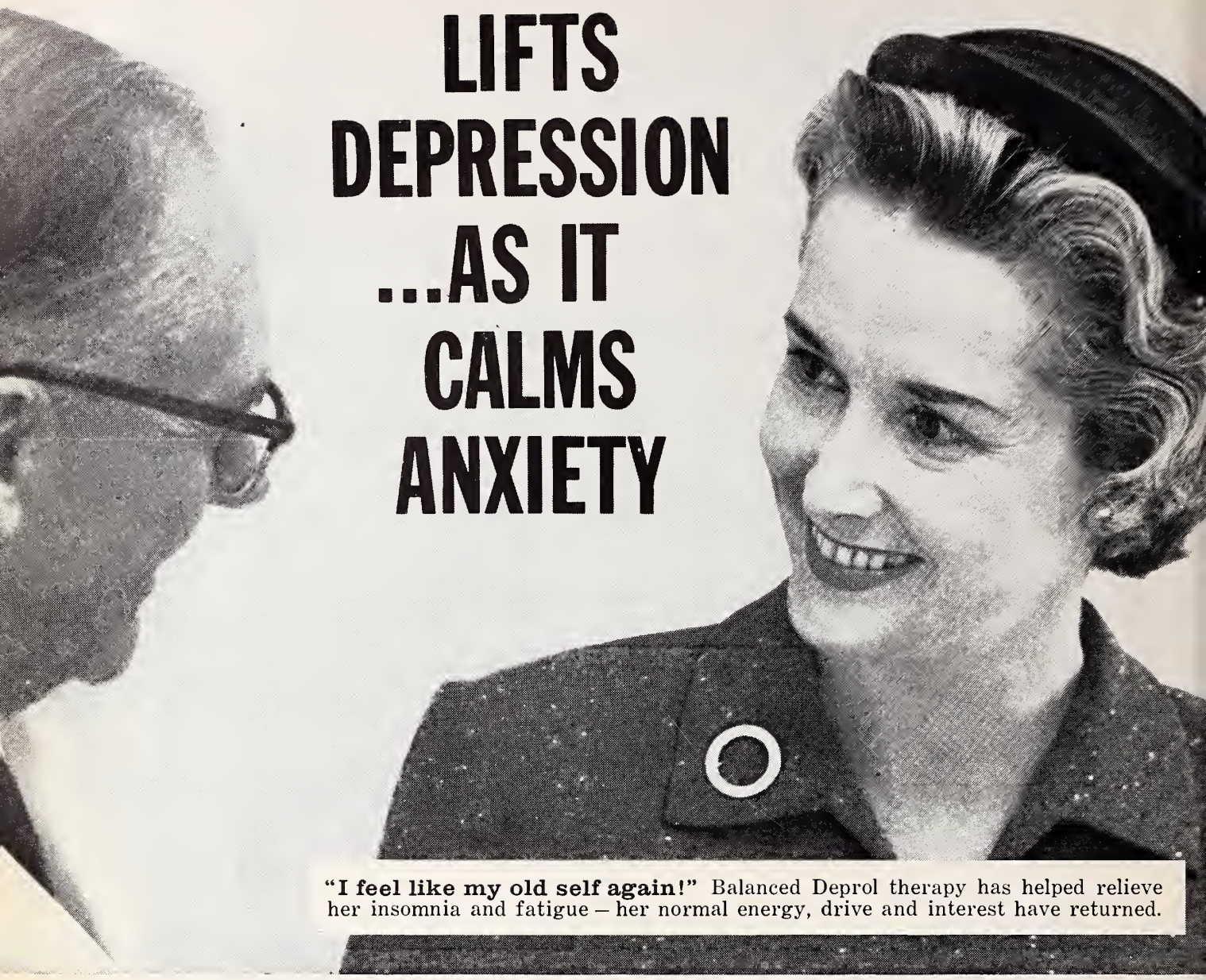


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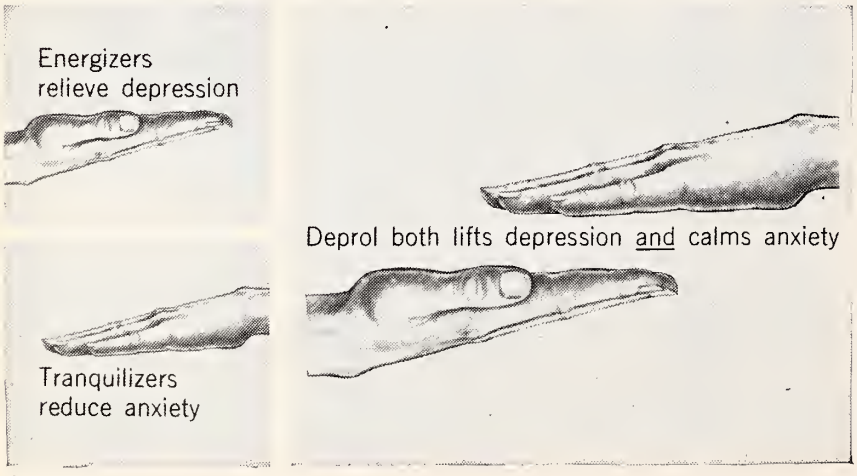
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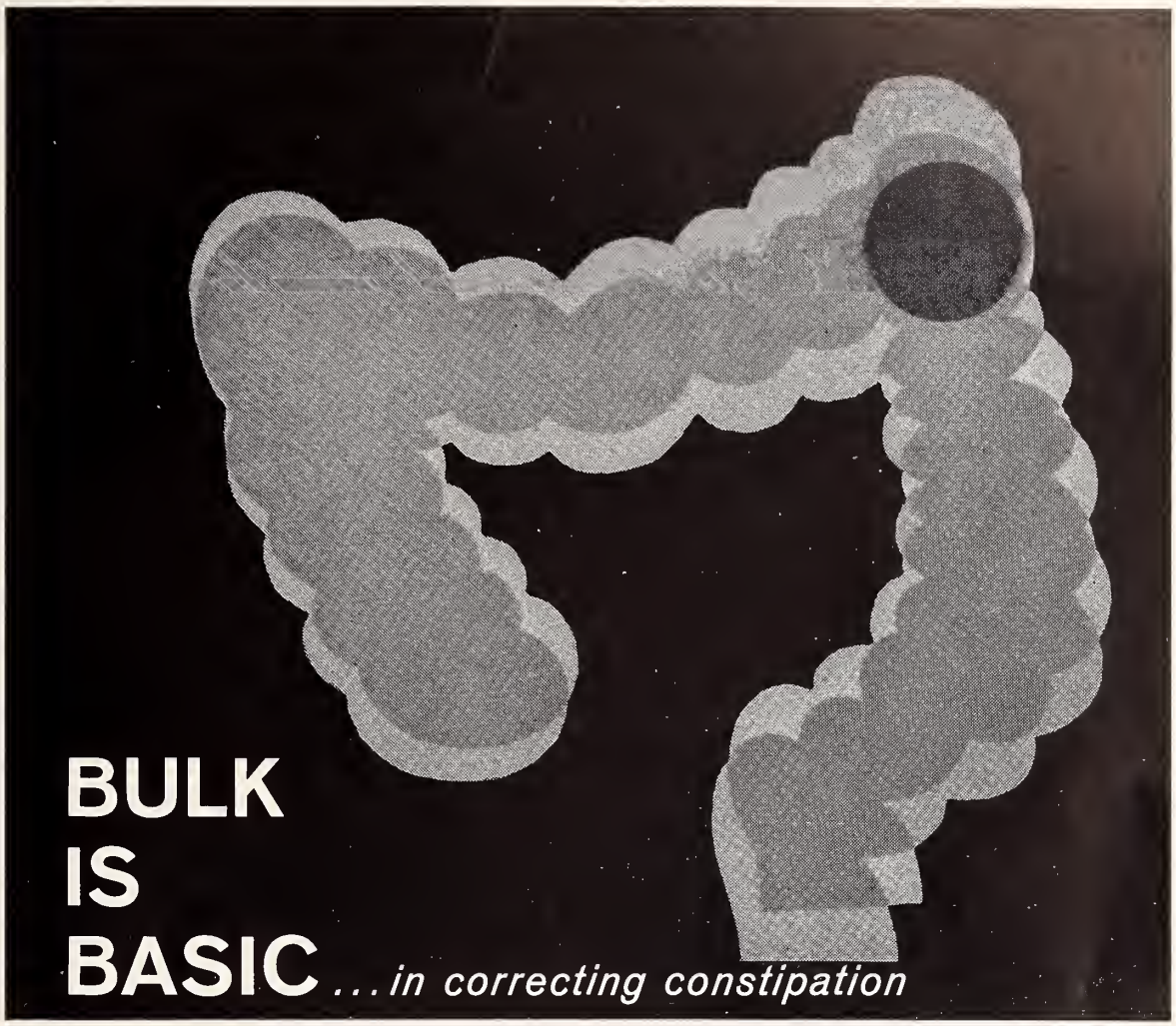
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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, ed. 6, Baltimore, The Williams & Wilkins Company, 1955, p. 578.

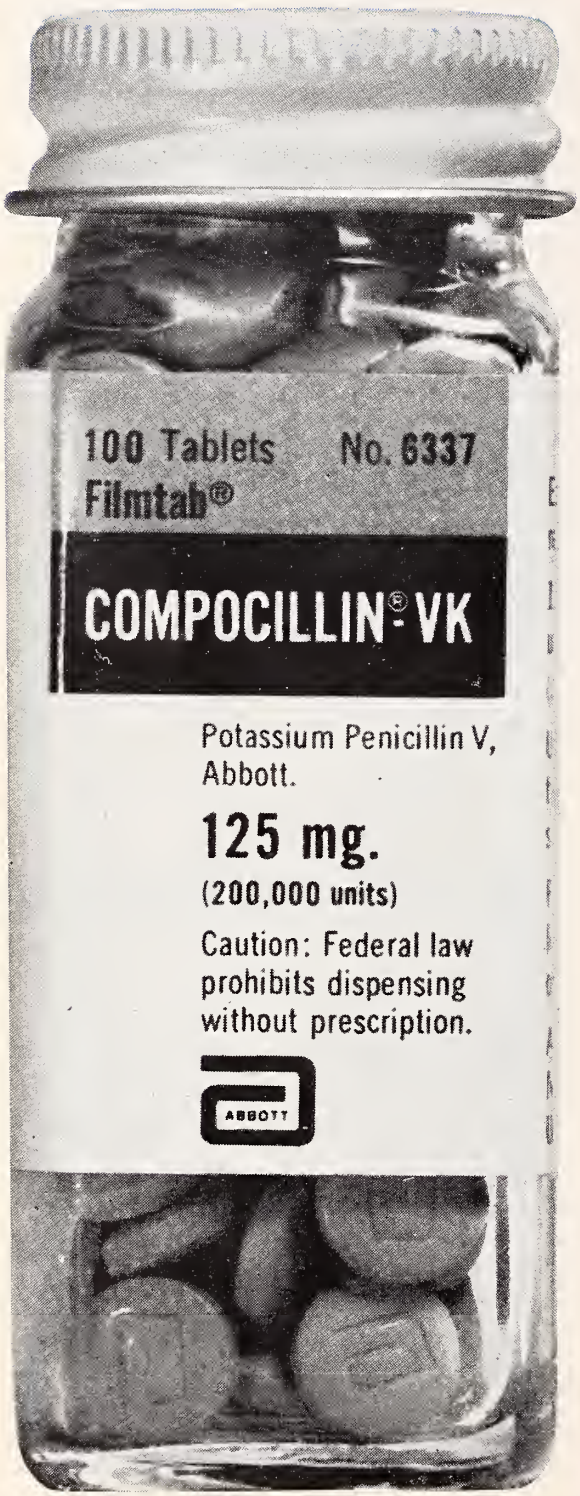
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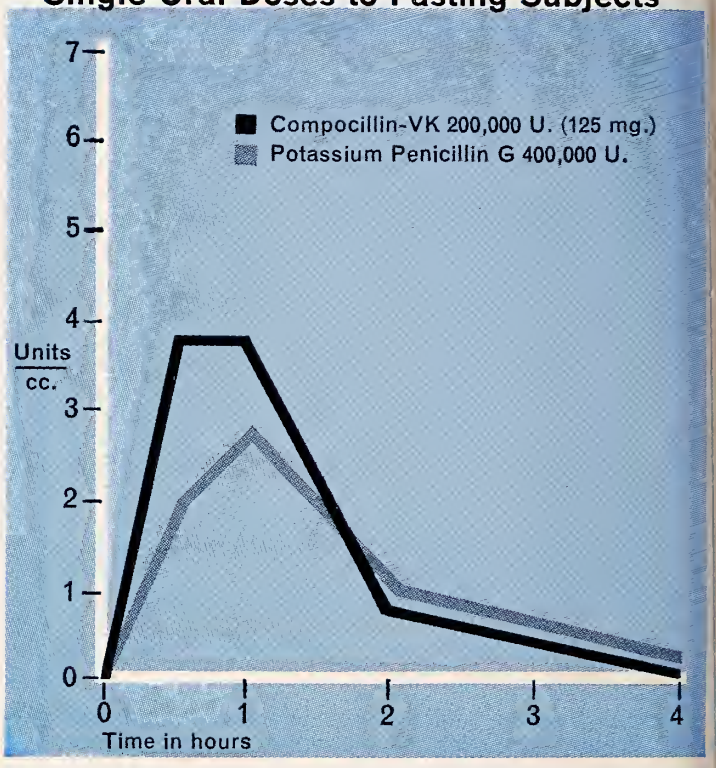
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PATIENT ECONOMY WHEN YOU WANT IT



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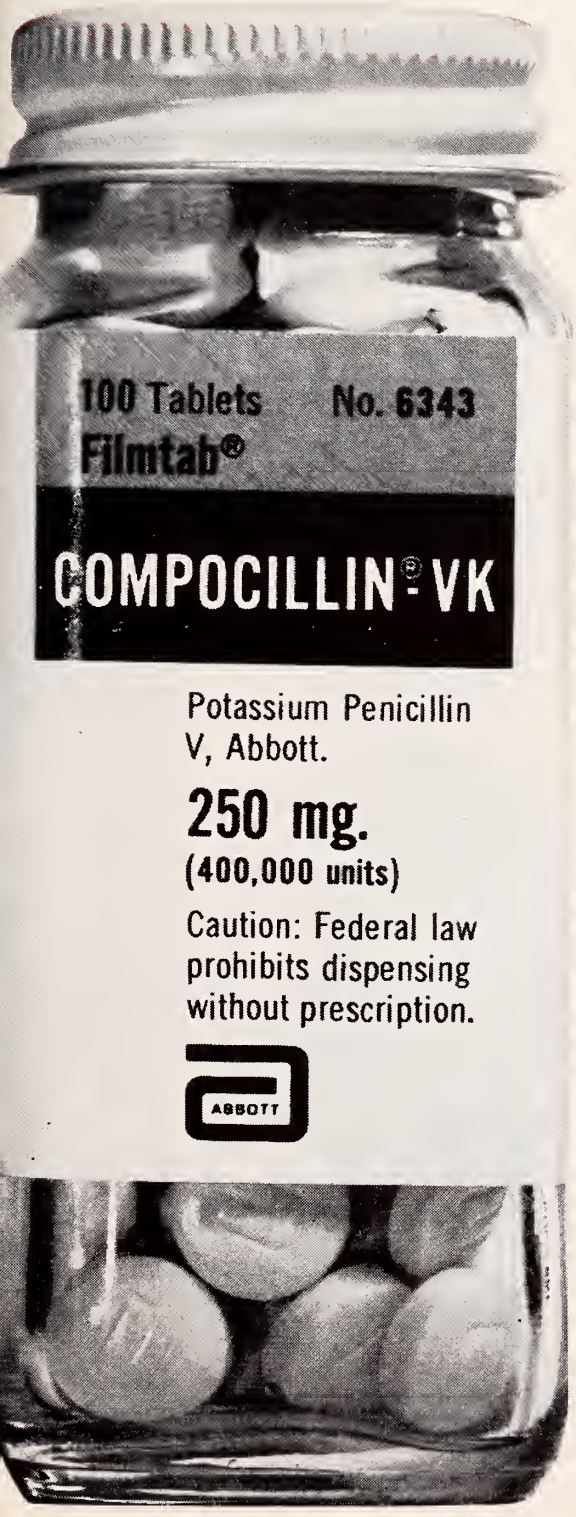
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An example might be a respiratory infection. Here economy could be a definite factor in your thinking. In the chart above, you'll see that 200,000 units (125 mg.) of Compocillin VK produces blood levels at least equal to those obtained with 400,000 units of oral penicillin G potassium. This means that in less severe infections, Compocillin-VK may be given at *half* the dosage needed with oral penicillin G—with no sacrifice in blood levels. In these cases, the cost of Compocillin-VK therapy will be no more—and often will be less—than treatment with oral penicillin G.

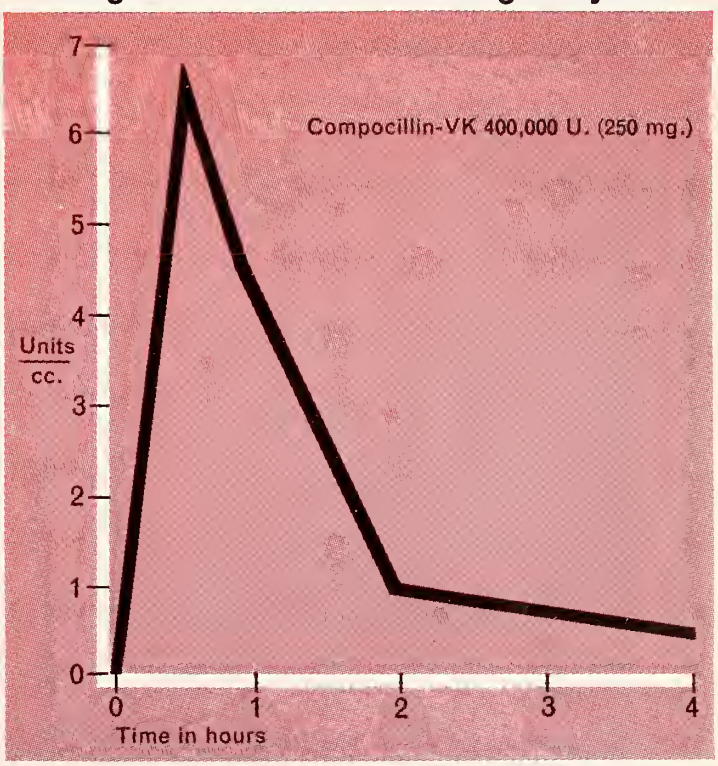
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. . . where your primary concern is high peak serum concentrations, you can prescribe Compocillin-VK at *full therapeutic dosage* and get the maximum antibacterial activity possible with an oral penicillin. The chart above shows the rapid peak blood levels obtained with 400,000 units (250 mg.) of Compocillin-VK. Actually, these peaks occur faster—and are higher—than those obtained with intramuscular penicillin G. Indeed, Compocillin-VK has been used in cases previously reserved for parenteral treatment. The safety advantage (oral vs. injectable) goes without saying.

*Chart data from two separate studies completed by the Microbiologic and Medical Departments of Abbott Laboratories.

ABBOTT LABORATORIES NORTH CHICAGO, ILLINOIS

PROFESSIONAL LIAISON COMMITTEE

September 15, 1962

The Professional Liaison Committee met September 15, 1962. Dr. Noel G. Smith, chairman, presided.

Present:
Dr. Ernest A. Born
Dr. Charles E. Henderson, secretary
Dr. Clyde W. Kurtz
Dr. William G. Payne
Dr. Delbert L. Secrist
Dr. Hugh H. Smith
Dr. Noel G. Smith, chairman
Dr. Albert G. Wagner

Staff:
Mr. Robert Carpenter, executive secretary
Mr. Joseph A. Ledwidge, executive assistant

Excused:
Dr. Harold J. Rowe
Dr. William B. Steen, president-elect
Dr. Clarence E. Yount, Jr., president

Minutes:

The minutes of the Professional Liaison Committee meeting November 12, 1961 were approved.

Organization Subcommittee Assignments

Dr. Noel G. Smith appointed committee members to serve as subcommittee chairmen and approved the subcommittee membership recommended by the subcommittee chairman as follows:

Allied Professions:
Dr. Clyde W. Kurtz, chairman
Dr. Harry J. French
Dr. Sidney L. Stovall
Dr. Charles W. McMoran
(One more member will be appointed later)

Careers and Arizona AMEF:
Dr. Albert G. Wagner, chairman
Dr. Dermont W. Menck, vice-chairman
Dr. Arnold H. Dysterheft
Dr. C. Herbert Fredell
Dr. Bernard W. Simons, Jr.

Governmental Medical Staffs:
Dr. William G. Payne, chairman
(Subcommittee members will be be announced later)

Nurses — Medicine and Religion:
Dr. Delbert L. Secrist, chairman
Dr. Ernest H. Price
Dr. James J. Berens
Dr. John T. Clymer
Dr. Maxwell R. Palmer
(Additional members will be announced later)

Public and School Health:
Dr. Hugh H. Smith, chairman
Dr. Frederick M. Kenan
Dr. Hugh E. Dierker
Dr. Richard B. Johns
Dr. Martin S. Withers

Related Non-Official National Organizations:
Dr. Harold J. Rowe, chairman
(Subcommittee members will be announced later)

Woman's Auxiliary:
Dr. Ernest A. Born, chairman
Dr. Frederick W. Knight
Dr. Clare W. Johnson

Reports of Subcommittees

Allied Professions:

Dr. Kurtz reported on matters of osteopathy, podiatry, chiropractic and the Sierra Vista Hospital. The committee directed to request the Board of Directors to allow Dr. Kurtz to present the matter of osteopathy at the next board meeting October 28, 1962.

Careers and Arizona AMEF:

Dr. Wagner reviewed the organizational structure of the career program during the fiscal year 1961-62. He reported that most of the activity was carried on in Maricopa County with the full cooperation of the medical society, and that the effort proved very successful. Information on similar activities in the remaining county medical societies is not available at this time.

Dr. Wagner said that the individual mailings provided by AMEF (now AMAERF — American Medical Association Education and Research Foundation) might be used to promote contributions from Arizona doctors. (The Reference Committee recommended that House of Delegates Resolution 8 on AMEF contributions and student loan fund program not be adopted and that the House of Delegates discontinue the assessment of $10 per member for AMEF. For complete resolution see ARIZONA MEDICINE, August, 1962, page 17A.)

Dr. Wagner suggested that Dr. Born's subcommittee should encourage the Woman's Auxiliary to continue its excellent activities to provide funds for AMAERF. He also said that possibly additional effort should be made to reactivate the "Arizona Plan," which was designed to encourage the channeling to this fund the value of normal business Christmas gifts presented to the doctors by pharmaceutical houses, druggists, morticians, etc. The committee endorsed these suggestions.

It was agreed that the membership of The Arizona Medical Association be informed of the discontinuance of the contribution to the AMAERF through dues assessment in 1963 and that they be encouraged to donate direct to this worthy program through a notice prominently inserted in ARIZONA MEDICINE.

Governmental Medical Staffs

Dr. Payne said that he had no report.

Nurses — Medicine and Religion

It was reported that in the field of nursing a closer liaison between the nursing profession and the doctor of medicine needs to be developed. It was noted that the Arizona League for Nursing wishes representation of this organization in its community activity to co-sponsor the State Inter-Organization Committee on Tuberculosis and Long Term Illness Nursing. Its objective is to improve nursing service and nursing education to better meet the nursing needs of tuberculosis and long term illness patients and their families, and to help prevent tuberculosis and other respiratory infections.

Dr. Secrist reviewed previous discussions with Rev. Dr. Paul B. McCleave, Director of the Department of Medicine and Religion of the Division of Field Service of the AMA. He discussed the pilot program to be undertaken in the next few months to meet with the ministry to develop better understanding and teamwork in the treatment of the whole patient, both medical and spiritual. Arizona and eight other states have been chosen for the study.

It was decided that one meeting would be held in Tucson and possibly a second one in Prescott. The question was raised as to the need for a separate meeting in Phoenix, since the Maricopa County Medical Society has engaged in this activity in the past.

Dr. Wagner reviewed the Maricopa program which has been successfully organized and operated during the past few years and which brings together the local ministry and the doctor of medicine in the interest of the patient.

Public and School Health

The purposes, functions and duties of the Professional Liaison Committee and its subcommittee on Public and

School Health were discussed. It was Dr. Hugh H. Smith's opinion that the Professional Liaison Committee was designed to investigate and study any problem referred to it by the Board of Directors and to serve as a liaison group. It was the feeling that this does not preclude the committee as a whole or any of its subcommittees from originating ideas and studying problems of interest or concern to the profession and from submitting recommendations to the Board of Directors through the standing committee.

A point in question was air and water pollution. This activity is currently assigned to the Professional Committee. Within the state, following legislation this year, was is considered a public health matter.

It was determined to express this eommittec's views to the Board of Directors that if air and water pollution is considered a public health matter it should be assigned to this committee to avoid divided responsibility.

Dr. Smith also said that effort is continuing to develop better understanding and cooperation between the practicing physicians and those who are concerned with the practice of public health. Continuing support of the State Public Health program was indicated and desirable.

Legislation providing for standards and regulation of nursing homes has been enacted and details involving inspections and enforcement should be determined and adopted soon.

Air pollution is another subject favorably considered by the legislature. Regulatory ordinances are being made in Maricopa County, and it is anticipated that they will be adopted by the Maricopa Board of Supervisors in the next few weeks. The Pima County activity is just now developing.

A project considered of importance should be the licensing of medical laboratories, governmental and private, including the teehnicians, for the protection of the public. This subject will command consideration, understanding and cooperation between the practicing physicians and the health departments. Study this year should be given to this important development.

AMA has calied attention to its efforts in the past few years to cooperate with the President's Council on Youth Fitness. A new phase of the project is health examinations of children and youth. An outline of suggested school health policies and program was submitted to the committee, and was mailed to all component medieal societies. All component medical societies have been urged to cooperate.

Related Non-Official National Organizations

There is apparent lack of liaison between the association and the National Foundation, and a need of liaison appears indicated. Dr. Rowe reported his findings and inactivity in the Tucson area in this regard. It was brought out that the National Foundation annually makes available scholarships for medical students, and possibly Arizona should participate and submit recommendations.

There appears to be continuing nced for activity on the part of this committee in the development of closer liaison with organizations coming within its seope. This should be pursued to assure medical representation in an advisory capacity within the boards and/or agencies.

Woman's Auxiliary

Dr. Born had no report, but expressed the hope that there would be more activity within his subcommittee in coming months.

All of the above reports were accepted.

Meetings

Members present indicated a desire to hold future meetings on a Saturday afternoon instead of on a Sunday. The chairman said that he would call the next meeting when sufficient business was available to be transacted.

Charles E. Henderson, M.D.
Secretary

Fourth Annual Award Paper
1963 Annual Meeting

March 13 is the deadline for accepting original papers to be judged by the Scientific Assembly Committee, The Arizona Medical Association, Inc., for the fourth annual award.

The Association has established this award "to stimulate research and original clinical effort" and to recognize the best scientific presentation by an Arizona physician.

It is requested that the papers presented should be investigativc work results and not necessarily single case reports.

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1. Groskloss, H.H., Clancy, C.L., Healey, E.F., McCann, W.J., Maloney, F.D., Loritz, A.F.: Clinical Medicine (Sept.) 1955.
Study involving 287 patients. 261 patients experienced excellent to good results with Bonadoxin for relief of nausea and vomiting of pregnancy. No side effects reported.[1]

2. Albertson, H.A., Trout, Jr., H.H., Daily, F.W.: The American Journal of Surgery (Sept.) 1956.
"As a result of this study, it is our belief that the routine prophylactic use of the combination of meclizine hydrochloride and pyridoxine is a safe and effective method for lessening the incidence of postoperative nausea and vomiting. We are employing this preparation as a routine pre-operative medication."[2]

3. Goldsmith, J.W.: Minn. Med. (Feb.) 1957.
Study involving 620 patients, 537 patients experienced moderate to complete improvement of nausea and vomiting of pregnancy with Bonadoxin. Toxicity and intolerance to the medication in the dosage employed in these studies was zero.[3]

4. Codling, J.W.; Lowden, R.J.: Northwest Med. (March) 1958.
Study involving 76 pregnant patients with nausea and vomiting. The results indicated an overall response in 70 of 76 patients treated. No side reactions were observed in this clinical study.[4]

5. Bentley, M.D.: Journal of the Mich. State Med. Soc. (Sept.) 1959.
[Bonadoxin] "was found clinically effective in the prevention of pre-operative and post-operative nausea and emesis in 157 patients who underwent ocular surgery, while control drugs alone could not completely eliminate the symptoms. Bonadoxin did not cause side reactions in the preoperative or postoperative phase of this study."[5]

6. Bethea, R.C.: International Record of Med. (May) 1960.
"Our investigation of this drug indicates that in 88 per cent of the cases satisfactory relief of the distressing symptoms of early pregnancy was obtained without undesirable side effects, including sedation."[6]

7. Sklaroff, D.M.; Karayannis, N.: Current Therapeutic Research (June) 1962.
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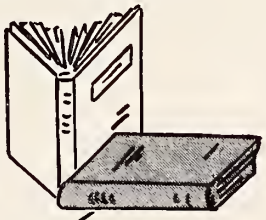
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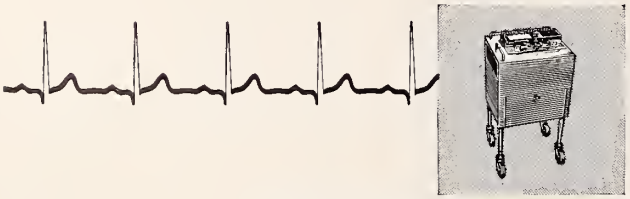
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Dr. Reeves

Experience With a New Sulfonamide, RO 4-2130

James E. Reeves, M.D.

A timely reminder of the frequent value of sulfonamide therapy as opposed to long term antibiotic programs. A new drug is described, with good effectiveness against a variety of infections, and only slight side reactions. Of particular interest is its effectiveness against Staphylococcus infections.

DESPITE the availability and extensive use of many effective antibiotic compounds, the sulfonamides still occupy an important position in the treatment of infectious disease.

The demonstration in 1936 of the therapeutic effectiveness of sulfanilamide in human streptococcal infections led to widespread use of sulfonamides and a new era in the treatment of infectious disease. Early enthusiasm for these compounds was soon offset by reports of occurrence of crystallization in renal tubules and other complications which resulted in serious and sometimes fatal reactions.

With the advent of penicillin and other antibiotics, interest shifted away from the sulfonamides. However, attempts to produce sulfonamide compounds with greater solubility, less toxicity and greater therapeutic efficacy continued and were eventually successful.

In the past fifteen years new, improved sulfonamides have been used more and more extensively, due to increasing awareness of the dangers of widespread use of antibiotics, and the advantages of newer sulfonamides, i.e. potent antibacterial activity and increased safety, ease of oral administration, rapid absorption, economy and susceptibility of measurement in body fluids.[1-3]

Current interest in a new sulfonamide, RO 4-2130, is due to reports of its effectiveness in management of bacterial infection.[4-5] Chemically, RO 4-2130 is 5-methyl-3-sulfanilamido-isoxazole. Its chemical structure is similar to that of sulfisoxazole as shown in Fig. 1 (*following page*), and its relationship to sulfanilamide is seen in Fig. 2 (*following page*).

In preliminary trials, RO 4-2130 provided effective sympomatic relief in patients with genitourinary infections and produced minimal side reactions. Metabolic studies have shown that urinary excretion is rapid, with the greatest portion excreted in the first 24 hours following administration[6]. Kiser et al.[5] showed that therapeutic serum levels were attained four to six hours after drug administration, and significant levels maintained for 12 hours or longer on a single 1 gram dose.

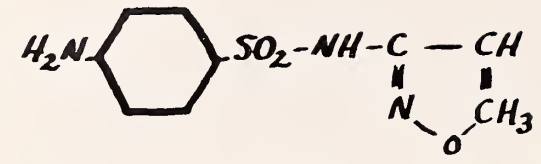
In view of these preliminary reports, it was decided to evaluate RO 4-2130 in a group of 50 patients with a wide variety of bacterial infections.

Materials and Methods

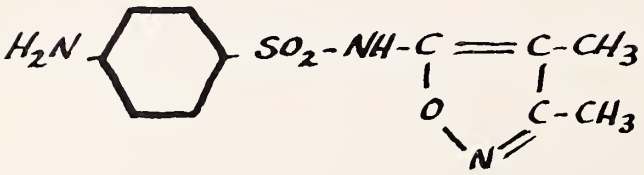
RO 4-2130 was administered to 50 patients for a wide variety of bacterial infections including

RO 4-2130 is marketed as Radonil by Hoffman-La Roche, Inc., Nutley, New Jersey.

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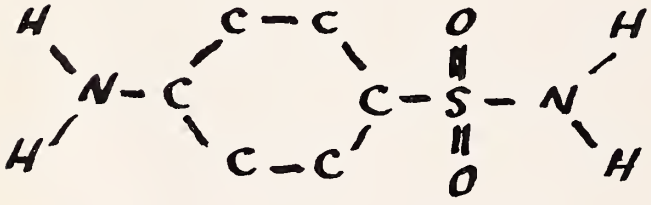
(RO 4-2130)



SULFISOXAZOLE

(GANTRISIN)

Fig. 1



SULFANILAMIDE

Fig. 2

cystitis, pyelonephritis, epididymitis, prostatitis, otitis media, cellulitis and others summarized in Table I.

The initial dose in 25 patients was 2.0 gm. The other 25 were children and small women and received 1.0 gm. initially. With the exception of three large male patients who received 1.0 gm. three times daily, all patients received 0.5 gm. three times daily for the maintenance dose. Duration of treatment ranged from 5 to 14 days. The average duration of treatment was 7 days.

In 26 patients, pre-therapy cultures were done and the organisms identified are listed in Table II. Post therapy cultures were performed in all but one of these patients. Complete blood counts were done on 32 patients before and after therapy. The urine in 39 patients, examined before and after treatment, appeared normal in 21 patients before therapy. In the remaining 18 patients urine was abnormal, showing Escherichia, enterococci and Neisseria.

Results of treatment were evaluated according to degree of remission of clinical symptoms and rated as "good to excellent" or "failure".

Results

Forty-eight (96 per cent) of the 50 patients who received RO 4-2130 had a good to excellent response to treatment, and two (4 per cent) had a poor response. With the exception of one patient with a poor response who had nausea and vomiting with mild headache, no side reactions were observed.

No adverse changes were noted in the blood of the 32 patients whose blood was examined. White blood cell counts, often elevated before therapy, returned to normal after therapy with RO 4-2130. The abnormal urines observed in 18 patients before treatment also were normal after therapy.

Post-treatment cultures were negative in 23 of the 26 patients who had culture studies done. One patient did not have a post-therapy culture and the two patients with treatment failures had positive post-therapy cultures after treatment. Gram-negative rods were identified in one of these patients and alpha streptococci and Neisseria in the other. This study was carried out for about 4 months, and during this time it was noted that offending bacteria definitely tended to vary from month to month.

Discussion

Considering the known lack of correlation between clinical and bacteriological response with sulfonamide compounds, the excellent correlation observed in the present study is outstanding, as is the response RO 4-2130 demonstrated against staphylococcus and the gram-negative rods.

Results of this and other studies[4,5] indicate that RO 4-2130 possesses the favorable properties of the newer sulfonamides. Following oral administrations of a single 1 gram dose, absorption is rapid and therapeutic levels maintained for 4 to 6 hours, according to Brandman.[6] Safety of the drug, as demonstrated in this study, is

Table I.

SUMMARY OF RESULTS OF TREATMENT WITH RO 4-2130

Diagnosis	No. of Patients	Excellent-Good	Failure
Cystitis	7	7	
Pyelonephritis	3	3	
Seminovesiculitis (non-specific)	1	1	
Epididymitis (non-specific)	1	1	
Vesicovaginal fistula	1	1	
Prostatitis	1	1	
Gonorrhea	1	1	
Pneumonitis	4	4	
Otitis media	3	3	
Bronchitis	2	2	
Tracheobronchitis	3	3	
Nasopharyngitis	8	7	1
Tonsillitis	7	6	1
Asthma with infection	1	1	
Phlebitis	1	1	
Abscess, leg.	1	1	
Cellulitis	3	3	
Erysipelas	1	1	
Osteomyelitis	1	1	
Total	50	48	2
		96%	4%

Table II.

ORGANISMS IDENTIFIED IN PRE- AND POST-THERAPY CULTURES IN 26 PATIENTS

Organisms identified before therapy	Times identified	Cultures not repeated	After Therapy Neg.	Pos.
Gram-negative rod	10		9	1*
Alpha streptococcus, Neisseria	5		4	1*
E. coli	3		3	
Staphylococcus albus (coagulase positive)	1		1	
Alpha and non-hemolytic streptococcus	2	1	1	
Gram positive cocci	4		4	
Alpha streptococcus, Staphylococcus aureus (coagulase, positive)	1		1	

*Treatment failure

high. Only one patient required discontinuation of the drug due to side effects, and no adverse changes were noted in blood or urine following therapy. The rate of effectiveness observed in the present study parallels that in other preliminary reports.

While it must be remembered that early reports of safety and effectiveness are not always substantiated by extensive trials, it appears that RO 4-2130 gives promise of being a useful addition to the drugs available today and is definitely worthy of further clinical trials.

Summary

RO 4-2130 was administered to 50 patients with a variety of infections including pyelonephritis, cystitis, epididymitis, prostatitis, otitis media and others.

The initial dose was 2.0 gm. in 25 patients and 1.0 gm. in the other 25, who were children or small women. The maintenance dose in most patients was 0.5 gm. three times daily. Culture studies, complete blood counts, and urine tests were done in more than half of the patients.

Response was good to excellent in 48 patients. Two patients had a poor response, one of whom had nausea and vomiting with mild headache. These were the only side effects observed. No adverse changes were noted in blood or urine following therapy.

Post-treatment cultures were negative in 23 of the 26 patients who had culture studies done. The only two patients with treatment failures had positive post-therapy cultures, indicating remarkable correlation between bacteriological and clinical response.

The excellent clinical and bacteriological response and the low incidence of side effects observed with RO 4-2130 in this study indicate that this drug is a useful addition to available sulfonamides and worthy of further trial in the management of a variety of bacterial infections.

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Dr. Delp

Physical Diagnostic Vignettes

Mahlon Delp, M.D.

An excellent presentation of diagnostic clues to be gained from careful physical examination, a technique which surely is not an archaic art.

IT is fallacious to think that medicine is a precise science, and particularly is this so in diagnosis. Many people and perhaps a few physicians have come to believe medical diagnosis and care to be simply a commodity consisting of diagnostic procedures, X-ray studies, laboratory tests, surgery, medications and the like. To many people, and to more than a few physicians, the answer to any problem, diagnostic or otherwise, lies merely in applying en masse innumerable pseudo-scientific tests and mechanical observations while standing by in detachment until the result is ground out.

Even if medicine were an exact science, the patient is not a scientifically measurable entity and never will be. We then need revitalization of techniques, fruitful and appropriate in the past and still remaining so.

In the diagnosis of disease no method of approach gives such a high yield, even now, as a careful history and a thorough, meticulous physical examination. It must be emphasized that this is a laborious and time consuming procedure not in any way similar to the usual sketchy history taking and perfunctory physical examination so common today. True it is that the method is more effective in episodic medicine as compared to preventive medicine, where in the latter impersonal chemical tests and mechanical diagnostic studies may more likely reveal difficulties to prevent.

More physicians need acquire the obsession of McKenzie in his later years when he was so intensively studying the early *signs* and *symptoms* of illness; the signs and symptoms which the personal physician has the real opportunity to detect. The approach to a patient's health problem through the history and phyiscal examination is a deeply personal method, one by which the physician can firmly establish that important initial rapport and confidence so completely necessary in the care to follow.

It seems safe to say that if all new patients going to physicians in the ensuing year were reintroduced to this medical method, many of the present criticisms of medicine and physicians in America would vanish within the year.

Physical diagnosis is not a static area. Progress is being made regularly. And to document this and hopefully to rekindle a bit of interest, I am reviewing a series of new or relatively new, and a few older yet useful signs, which are being overlooked in this state of turmoil in the practice of medicine.

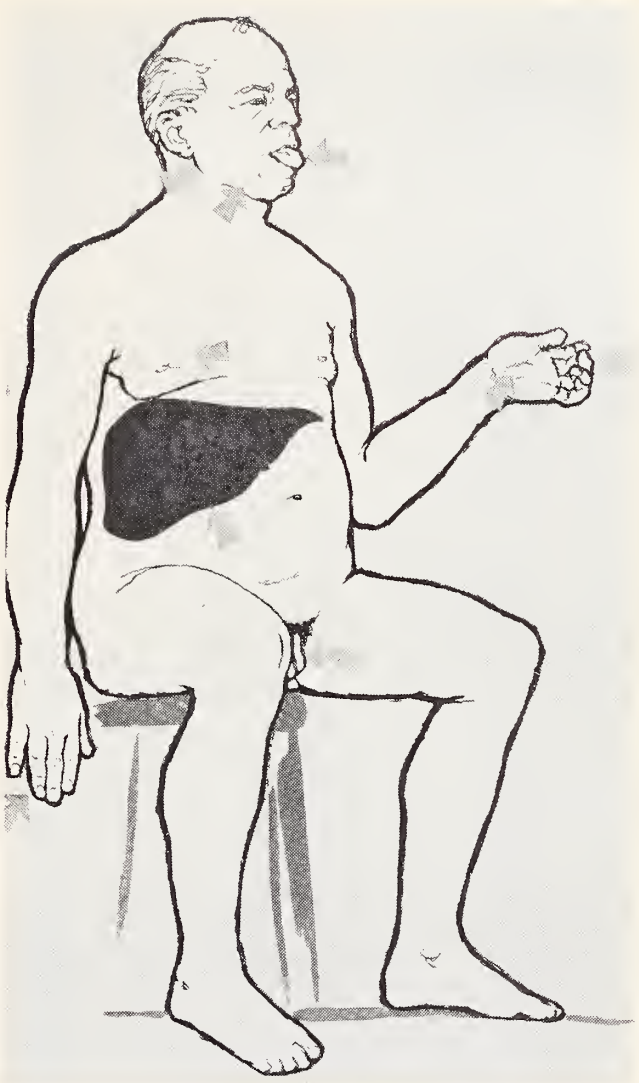
Presented before the Section of Medicine, 70th Annual Meeting, Arizona Medical Association, Safari Hotel, Scottsdale, Arizona, on April 28, 1961.

Chairman, Department of Medicine, University of Kansas Medical Center, Kansas City, Kansas.

Cirrhosis Clues

The general features of the physical examination suggesting liver disease and cirrhosis such as ascites, edema, jaundice, palpable liver, palpable spleen, fever, and signs of collateral circulation indicate far advanced disease. And their appearance offers little time to reclaim the patient. We wish to give greater emphasis to those signs which appear fairly early and which also have a high degree of reliability in suggesting that liver damage exists and has progressed to the stage referred to as cirrhosis. Such signs may thus stimulate or provoke us into such biochemical and histologic examination so to make the diagnosis certain.

The following are the signs we wish to emphasize: hepatomegaly, spider nevi, palmar erythema, Dupuytren's contracture, white nails, glossitis, soft textured skin, testicular atrophy, gynecomastia, parotid swelling, rectoral alopecia.



Cirrhosis clues

Hypercalcemia

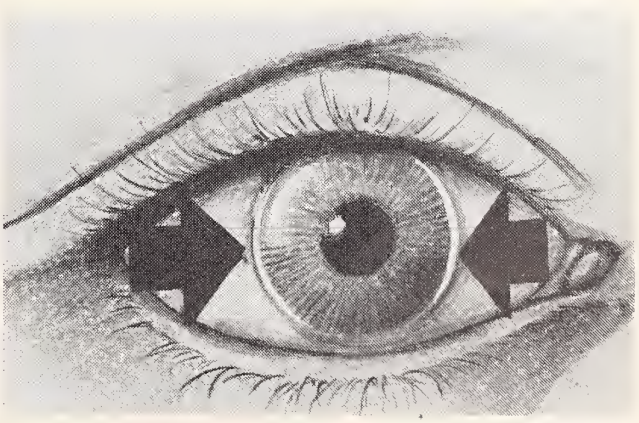
This frequently serious clinical problem can be very elusive. In escaping detection its potentially lethal character becomes magnified.

Walsh and Howard[2] in 1947 discovered that by using the slit lamp, ocular changes could be found in over 50 per cent of patients with hypercalcemia. There are two areas in which calcium deposition may occur — conjunctival and corneal — and not rarely they may be seen by the naked eye.

The conjunctival deposits are small, glass-like, crystal clear particles within the ocular conjunctiva in the region of the palpebral fissure.

Corneal deposits of calcium produce a band keratitis — hazy, grayish, granular opacities running concentrically with the limbus, on either the nasal or temporal side or both. The opacity is most dense in the periphery.

Disease entities associated with hypercalcemia are: hyperparathyroidism, hypervitaminosis D, metastatic carcinoma, multiple myeloma, sarcoidosis, milk-alkali syndrome, thyrotoxicosis, acute osteoporosis, Paget's disease, idiopathic hypercalcemia of infants, acute adrenal insufficiency.



Eye signs of hypercalcemia

Liver Friction Rub, A Sign of Liver Malignancy

Wilcox[3] has discovered that a great number of patients with secondary or primary neoplasm of the liver at sometime have an audible friction

rub over the liver. The rub is a leathery sound and is said to resemeble the crunching of new snow. It is heard best over an enlarged liver in the epigastrium or the right upper quadrant. It may come and go, probably disappearing with ascitic fluid accumulation. Wilcox has never, nor have I, heard it in heart failure, amyloidosis, hepatitis, liver abscess or gallbladder disease.

The rub may be the only finding in a patient with upper abdominal discomfort when X-ray and other studies are normal.



Liver friction rub (above)

Reflexes and the Thyroid

Although Gull described myxedema over half a century ago, it still continues to go unrecognized. A valuable and useful sign is the characteristic Achilles tendon reflex response described by Chaney in 1924[4] but only recently rediscovered.

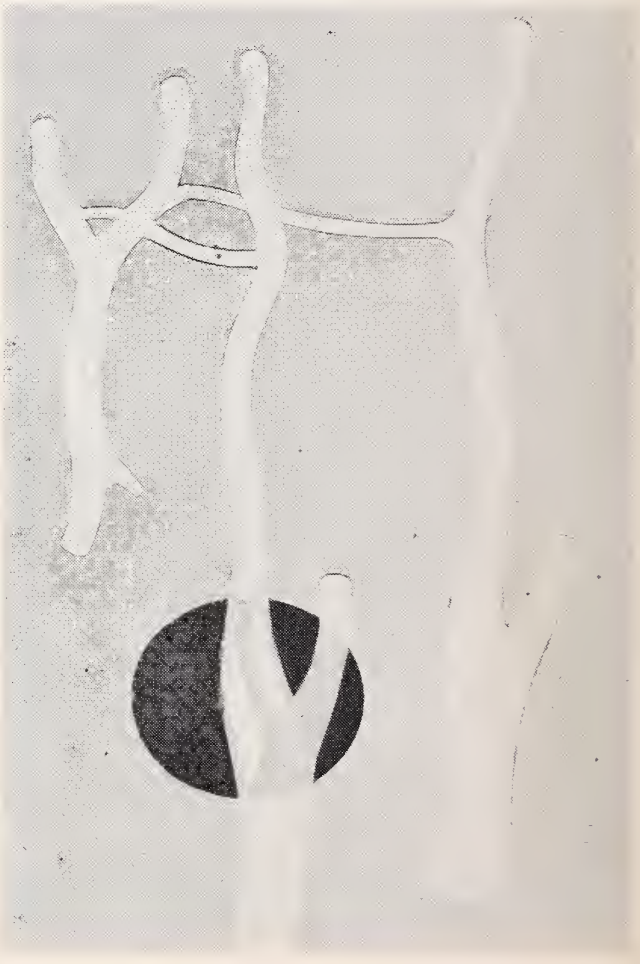
Chaney found that the time of contraction and relaxation of the muscle in this reflex was definitely prolonged in patients with myxedema, and this occurred in no other types of patients studied. The response in simple hypothyroid patients, short of true myxedema, is normal.

Lambert[5] has more recently studied and measured this phenomena of muscle activity and graphically confirmed Chaney's observation.

The feature seems to be a factor of the metabolie rate, and is probably due to an abnormality of the contractile mechanism of muscle rather than to a slowing of the stimulus in the peripheral nerves involved in the reflex arc or in the mechanism of excitation of the muscle. The sign is occasionally referred to as Woltman's sign.

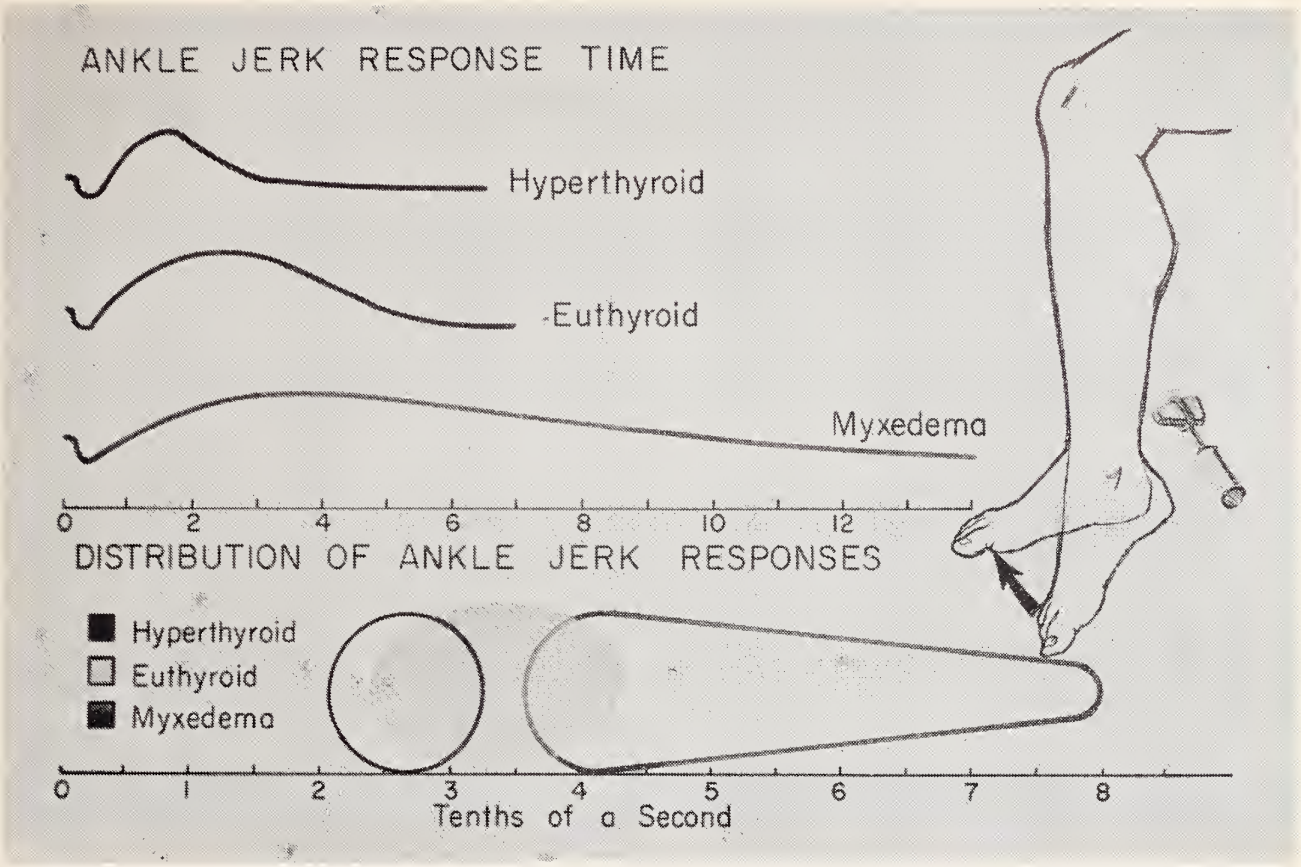
Lawson and Weissbein[7] have described an exactly opposite phenomena in hyperthyroidism. Utilizing an electromagnetic device connected to a standard electrocardiograph, they have measured the contraction time of the gastrocnemius muscle after stimulation of the tendon of Achilles in patients with hyperthyroidism.

Before treatment contraction time was 110-160 milliseconds. After therapeutically effective treatment of any form, the contraction time increased to 180-210 milliseconds. There was good correlation between clinical improvement and increasing muscle contraction time.

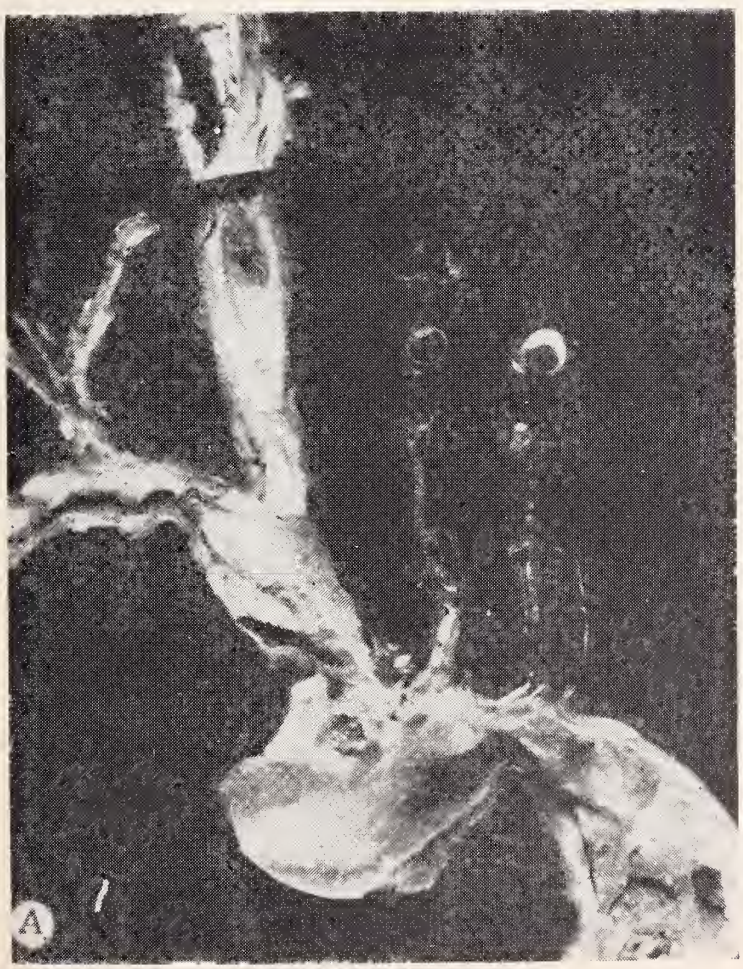


Carotid Artery Murmurs

The classical clinical syndrome of carotid artery thrombosis, namely monocular blindness



Carotid artery murmurs (below and preceding page)





with contralateral motor and sensory disturbances, is not well recognized, although it should be.

In carotid artery insufficiency when collateral circulation through the opposite carotid and basilar system is inadequate, a continuous murmur is produced, usually over the carotid bulb, the most common site of involvement. Routine auscultation of the head and neck can reveal a localized continuous murmur over the partially occluded carotid bulb. This may be the earliest sign of carotid artery insufficiency.

When the lumen narrows with atheromatous deposists in the bulb, a systolic appears first. As the lumen is further encroached upon, if collateral circulation is deficient, a continuous murmur will appear.

The Hepatojugular Reflux

William Pasteur, a medical registrar in Middlesex Hospital, originally described this sign in 1885, attributing its presence to tricuspid regurgitation. Subsequent experiences have shown it to be present with heart failure of any origin.

The hepatojugular reflux consists of a distention of the neck veins when pressure is applied over the liver in the semirecumbent patient.

In a competent heart, pressure on the liver does not elevate the venous blood level in the neck veins when the maneuver is tried as described above. The normal heart quickly increases its output, in compliance to an increase in venous return preventing a rise in general venous pressure.

The failing heart is not able to respond effectively to an increase in venous return. The venous pressure rises when pressure is placed on the liver, and promptly distention of the superficial veins and elevation of the pulsating level of the deep veins of the neck occur.

The hepatojugular reflux will often indicate the presence of heart failure before symptoms or other signs become clear. It, further, is useful in evidence of recovery.

Deformed Ear, A Clue To G. U. Tract Defects

Presence of deformed ears has drawn attention to congenital malformations of the genitourinary tract because the two are often found together.

It appears that renal agenesis, absence of one kidney, and double ureter are in some instances interrelated, genetically determined and linked to peculiar ear formations. The normal ear is surprisingly constant in gross contour.

Hilson[10], in a careful study of 23 children fitting this category, found the ear was sometimes markedly and grossly deformed. In others there were unilateral bat ears. But in all cases there was asymetry. There were large and small flabby ears, deficient in cartilage; upper ears folded over; small folded "cockle shell" ears; and ears squared off across the superior margin of the helix, with bulbous thickening of the flat upper edge of the helix.

As the children grew up, the deformities became less noticeable. Familial distribution of this complex does not seem to be sex-linked, but there are remarkable family histories of this clinical syndrome.

A malformed ear in the presence of enuresis, dysuria or any symptom referable to the genitourinary tract suggests the need for pyelograms.

Xiphoidalgia

Many patients complaining of pain in the upper abdomen, chest and shoulders do not present the characteristic picture of of any known clinical entity. Many undoubtedly have a hypersensitive xiphoid process. This area of the body anatomy is seldom examined and such omission, according to Lipkin[11] and associates, may result in missing many patients with xiphoidalgia.

The xiphoid has many variations in size and contour. Attached to it are fibers of the rectus abdominis, the costoxiphoid ligament, fibers of the diaphragm and transverse thoracis.

The best known source of sensory nerve fibers to the xiphoid consists of the spinal (fourth to eighth thoracic) nerves via the intercostals. Near the midline, anteriorly terminal fibers of these nerves spread upward over the sternal area. These nerves supply some areas of skin to which pain and hyperalgesia may be referred from the stomach and gallbladder in the mechanism of segmental spread of pain impulses described by Lewis.

Overlapping of xiphoid and cardiac afferent innervation occurs, since pain from the heart is

transmitted over the dorsal rami of the first to sixth thoracic nerves. Afferent fibers reach the phrenic nerves from the xiphoid. Phrenic innervation probably explains the referral of xiphoid pain to the shoulders.

This syndrome is common. It is seen without other disease but is more common in association with other diseases such as diseases of the heart, gallbladder, stomach, esophagus and osteoarthritis. It is diagnosed by phyiscal examination: pressure upon the xiphoid and observation for the characteristic pattern of discomfort.

The Puddle Sign

Celsus noted more than nine hundred years ago that "fluid often collects within the abdomen so that, if it be shaken by any movement of the body," the fluctuations of the fluid can be seen.

But this is of no help with small amounts of fluid. The familiar maneuvers of palpation and percussion readily demonstrate moderate to large collections of fluid but not small amounts.

Lawson and Weissbein[12], already mentioned, have described a method which in their hands will indicate the presence of as little as 120 cc. of fluid. The patient suspected of having ascitic fluid is instructed to lie on the abdomen for a few minutes and then is instructed to position himself on hands and knees.

The head of a Bowles stethoscope is then applied over the lowest part of the suspended abdomen where puddling would occur. As the near flank is repeatedly flicked with the finger, the stethoscope head is progressively repositioned away form the examiner and toward the opposite flank.

A positive sign consists of a marked change in the intensity and character of the percussion note as the stethoscope is moved toward the opposite flank. To the ear the intensity of the note seems to increase, and a point of demarcation is noted that correlates well with the amount of fluid present.

The patient then sits up, the examiner holding the stethoscope on what was the dependent area. Now the percussion note becomes loud and clear, if the initial impression is correct.

The Respiratory Sign

A new diagnostic sign in acute appendicitis has been described by Rizvas.[13] It is elicited as follows: The patient, lying on his back, is instructed to take a deep inspiration and hold it for 15-30 seconds, then to quickly expel it. In acute appendicitis this causes a sharp pain over McBurney's point.

The sign could be especially valuable in children and, according to Rizvas, is present very early in the process. While this sign is similar in all respects to the phenomenon of rebound tenderness, there might be some advantage in eliciting in a manner not requiring manual palpation of the abdomen.

Pericardial Effusion — Differential Sign

Even though percussion of the heart has become an unpopular and forgotten skill, it retains merit in the instance to be recited superior to the X-ray. Dressler, after studying 32 cases of pericardial effusion, compared the effectiveness of percussion and a single roentgenogram in making the diagnosis.

A single X-ray film made the diagnosis in 13% of the cases, while percussion alone gave correct findings in 58% of the instances.

A flat percussion sound over the lower half of the sternum, on the left of the sternum in the third interspace. and to the right extending from the sternum between the third and sixth ribs were the most reliable signs determined by Dressler. He ignored relative and intermediate areas of dullness, focusing interest only on the truly flat percussion note.

Actually there is a high degree of reliability to be placed in percussion of the sternum alone. In proven pericardial effusion a flat percussion note over the lower half of the sternum, sometimes extending upward as far as the second costal cartilage, sufficed as a diagnostic finding.

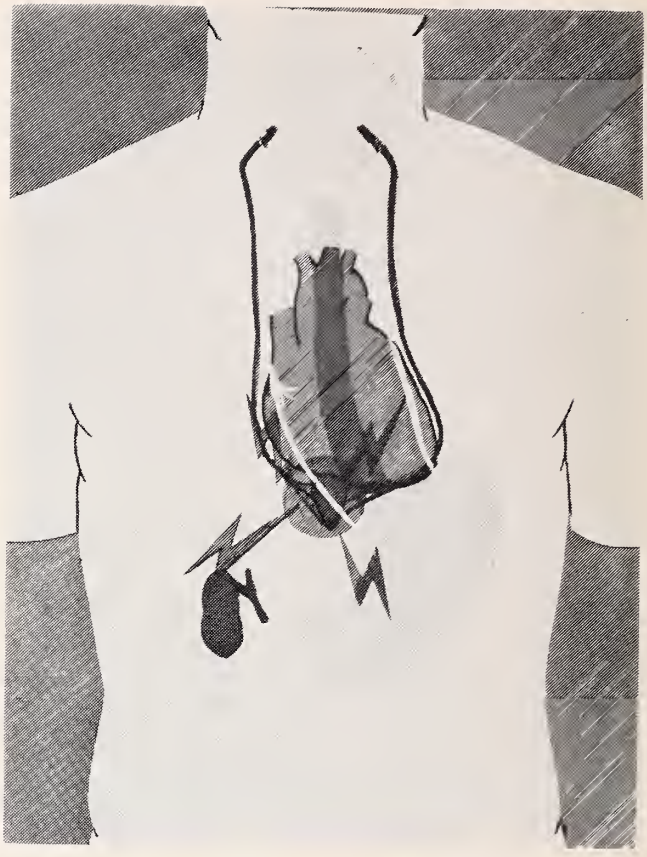
Detection of Mobile Retroclavicular Lymph Nodes for Biopsy

Frequently there is a real need to locate for biopsy a lymph node in making the diagnosis of lymphoma or various hematological disorders. The patient without demonstrable lymphadenopathy poses a real problem. In such cases scalene node biopsy is frequently necessary.

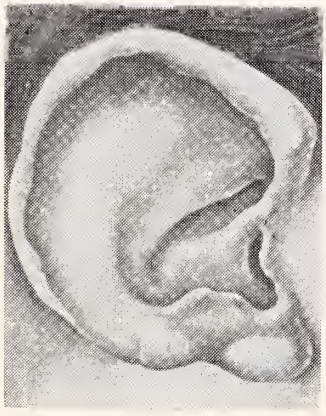
Terry[14] has recently called attention to a physical diagnostic maneuver which in three in-

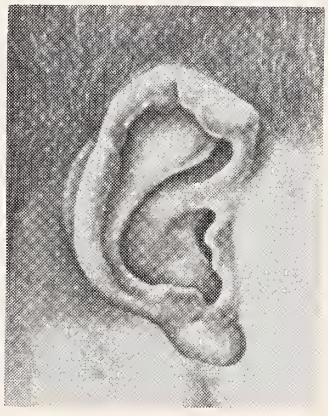


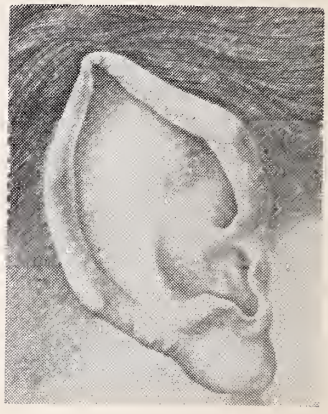
The hepatojugular reflux

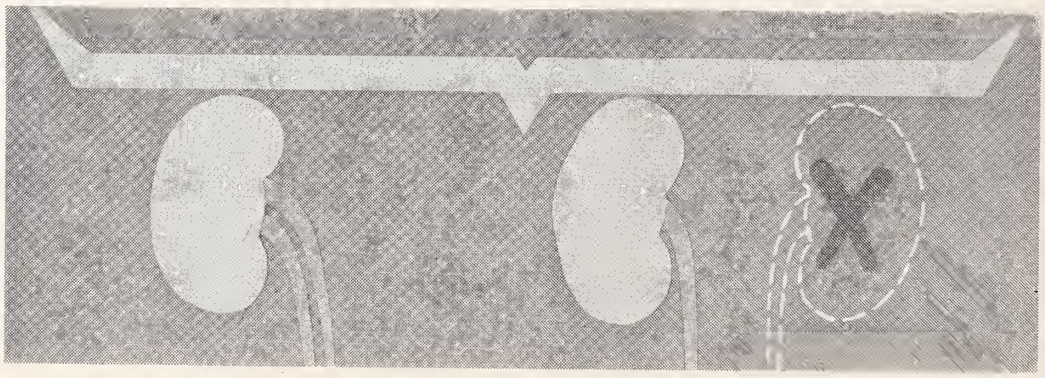


Xiphoidalgia

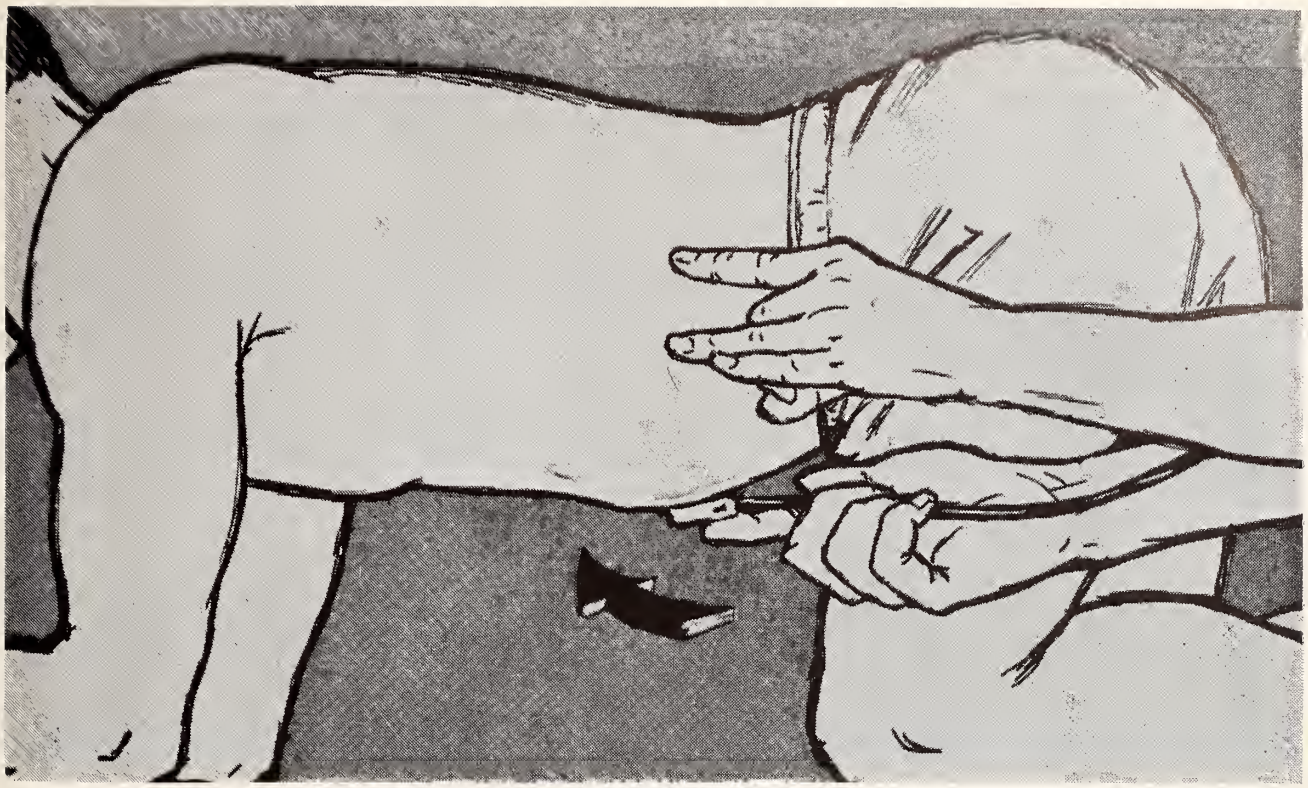




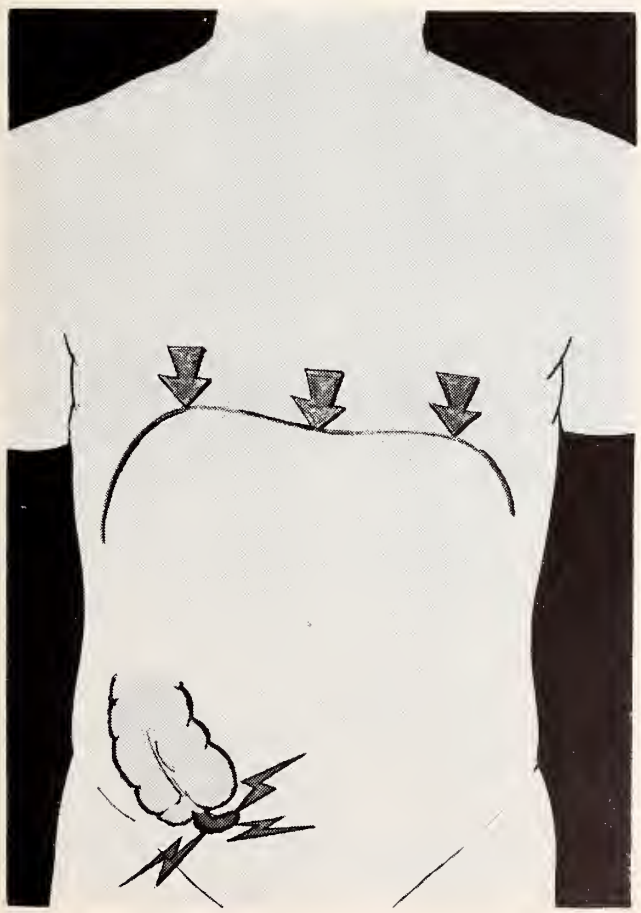




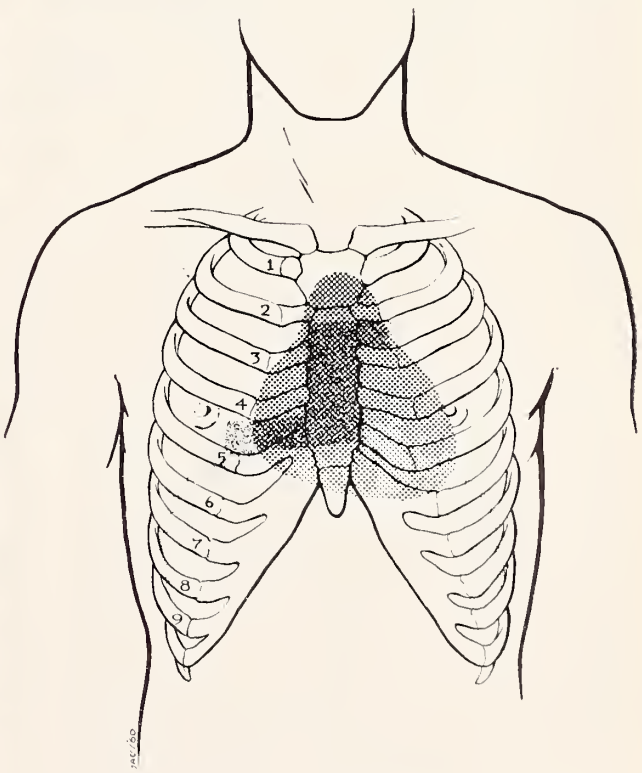
Deformed ear, a clue to G.U. tract defects



The puddle sign



The respiratory sign



Pericardial effusion — differential sign

stances made it possible for him to displace a large, barely detectable lymph node from behind the clavicle by having the patient cough or strain.

Coughing usually produces bulging of the supraclavicular fossa. With the shoulders held back, repeated coughing seems to increase the mobility of a barely visible node, and with continued straining it comes into position before it can actually be grasped and biopsy eventually done.

Nodes of this nature apparently lie deep into the cervical fascia and probably are related to the inferior cervical gland, according to Terry. They are not the sentinal node of Virchow, which lies more medially. This node cannot be displaced by coughing.

It seems likely that an attempt to make accesible this node ordinarily hidden deep behind the medial end of the clavicle should be tried in all such patients without the usual lymphadenopathy.

Hyperventilation as Sign of Gram Negative Bacteremia

Simmons, Nicoloff, and Guze[15] have reemphasized and documented visible hyperventilation in a series of eight patients with gram negative bacteremia. In three additional cases as well as the first eight, laboratory evidence of respiratory alkalosis was noted.

In nine of their 11 cases, the initial diagnosis was incorrect but the triad of hyperventilation, source of gram negative infection, and altered sensorium directed attention to the correct situation. Fortified by laboratory evidence of a respiratory alkalosis the phyiscal finding takes on real significance.

The real background explanation for this observation awaits further classification, but it is not apparently due to hypotension.

Not infrequently this phenomenon occurs in elderly postoperative patients where early recognition and prompt treatment is imperative. Treatment which awaits positive bacterologic cultures will be too late. Hence the usefulness of the physical sign is obvious.

Point Tenderness in Active Peptic Ulcer

Every physician knows that peptic ulcer is suspected from a history of epigastric pain, periodic in nature and relieved by food or antiacids, and that the diagnosis is confirmed by gastric analysis and X-ray studies. Few physicians, however, take advantage of a fairly useful physical sign.

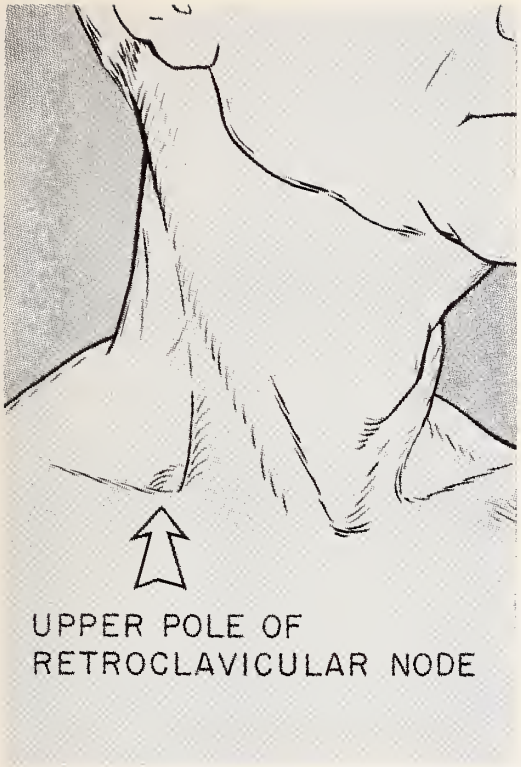
Roentgenologists have long used direct pressure over the duodenum with the lead gloved finger in order to force barium into the spastic bulb. In so doing they frequently elicit pain and tenderness. Many utilize this sign as probable evidence of activity of an ulcer. Checked with X-ray evidence of a crater there is a high degree of correlation between pain and tenderness and positive X-ray evidence.

Parallel evidence can be found during the routine abdominal examination. With the patient lying flat on the examining table, careful finger point palpation in a rectangular area having the umbilicus as its excentrically placed hub often will bring out painful tenderness over the area contiguous to the ulcer. The finding is quite suggestive of the diagnosis which can be confirmed by X-ray studies.

Summary

We have presented 14 features of physical diagnosis which do have usefulness in that highly personal process of making a diagnosis through the method of history taking and examinations. These features are:

1. Cirrhoisis clues
2. Eye signs of hypercalcemia
3. Liver friction rub, a sign of liver malignancy
4. Reflexes and the thyroid
5. Carotid artery murmurs
6. The hepatojugular reflux
7. Deformed ears and congenital defects of the genitourinary tract
8. Xiphoidalgia
9. The puddle sign
10. The respiratory sign
11. Pericardial effusion — differential sign
12. Detection of mobile retroclavicular lymph nodes for biopsy
13. Hyperventilation as sign of gram negative bacteremia
14. Point tenderness in active peptic ulcer





Detection of mobile retroclavicular lymph nodes for biopsy

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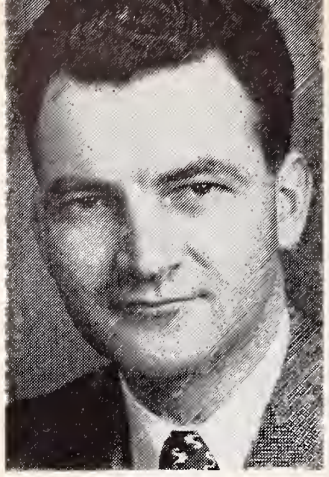
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Point tenderness in active peptic ulcer



Dr. Berens

The Management of Mammary Carcinoma

James J. Berens, M.D.

An encouragement to minimize embolization of cancer cells during radical mastectomy by early interruption of the venous and lymphatic channels.

IT is the purpose of this study to provide patients who have the potentiality for a permanent cure of breast cancer when first seen by their doctor with the best opportunity for permanent cure at the completion of their definitive care.

Breast cancer can be cured by surgical resection whenever all viable tumor has been removed from the patient at the completion of the operation. Manipulation of the carcinomatous breast has been known for decades to encourage metastatic spread of tumor.

Cytologic studies in recent years have demonstrated veritable showers of tumor cells in the regional and systemic circulation during the course of cancer operations such as radical mastectomy. It is reasonable, therefore, to assume that some patients whose tumor is confined to the resectable tissues before initiation of surgical treatment have dissemination of viable cancer cells beyond the area of resection at the completion of operative treatment.

Our attention in this study is directed to methods of prevention of tumor spread both before and during surgical treatment.

When a patient with a breast tumor is first examined the palpation should be gentle and brief. For the patient's benefit the number of examining physicians should be held to a minimum. Palpation of the axillary contents adds little diagnostic or therapeutic information.

After a mammary tumor is diagnosed the axillary fossa should be gently examined for one purpose — that is to ascertain that the axillary structures are not massively involved with metastatic cancer in an unresectable state. Further vigorous massage and squeezing serves only to encourage embolization of tumor cells beyond resectable tissues.

After a decision is made to treat a breast tumor surgically, the patient should be advised to refrain from further self-examination of the breasts until treatment is completed. Many women react to the threat of cancer with repeated daily self-examinations while awaiting hospital care.

Surgical Preparation

The surgical preparation of the skin must be performed in a manner to minimize the dislodgement and embolization of tumor cells. Vigorous scrubbing of skin is frequently done by nursing personnel who are more disciplined in methods of reducing bacterial infections than in the dangers of disseminating cancer cells. We are preparing the skin by painting or spraying antiseptic solution on the operative field with

Phoenix, Arizona

avoidance of all mechanical scrubbing.

Obtaining tissue to establish histologic diagnosis is a necessary evil entailing manipulations which promote vascular spread of tumor. These manipulations should be held to a minimum. Small tumors should be excised within a block of normal surrounding mammary tissue. Large tumors should be biopsied by excising a wedge or plug of the neoplasm rather than the more extensive dissections required to remove a sizeable growth.

In the operation of radical mastectomy efforts should be directed toward the prevention of embolization of carcinoma cells beyond the resected tissues.

Basic Surgical Treatment

Two important items that are basic to effective surgical treatment of cancer shall be stressed.

1. The portions of the surgical procedure requiring the most vigorous manipulations of tumor bearing tissues should be withheld until the vascular routes of tumor dissemination have been interrupted.

2. The vascular routes of tumor dissemination should be interrupted as early in the operative procedure as feasible.

These two items will be elaborated upon because they have not been adequately utilized in the radical mastectomy as traditionally performed. The vertical incision is usually used in this procedure.

With a patient in the supine position on the operating table the breasts assume a lateral position on the chest wall. The medial skin incision and elevation of the medial skin flap are performed utilizing the natural force of gravity to retract the breast laterally. The medial dissection may thus be carried out with little or no manipulation or manual traction on the tumor bearing breast.

In marked contrast to this, the creation of the lateral skin incision and skin flap requires mechanical retraction of the breast from its lateral position on the chest wall. During the lateral portions of the dissection the retractors, whether they be the assistants hands or instruments, must be repeatedly readjusted to provide surgical exposure and tissue traction to facilitate the dissection. Obviously each readjustment is accompanied by more manipulation and massage of the tumor bearing breast to encourage embolization.

The larger the size of the breast, the greater is the lateral retraction due to gravity to facilitate the medial dissection and the greater is the manual retraction required to perform the lateral dissection. Thus, the medial dissection, which provides minimal precipitation of tumor embolization, should be done first. And the lateral dissection, which is accompanied by much breast retraction, should be withheld until the efferent vascular routes of tumor dissemination are divided.

The lymphatic drainage from the breast courses medially to the internal mammary lymph nodes and cephalad to the axillary lymph nodes. Unfortunately axillary lymph nodes contain metastatic cancer in the majority of patients at the time of radical mastectomy.

The spread of cancer from the axillary lymph structures is in a medial direction through the effernt lymphatic channels that course from the apex of the axilla beneath the clavicle to drain into the jugulosubclavian venous junction.

In Operative Procedure

Surgical treatment is obviously more effective if these efferent lymphatic vessels draining to the mediastinum and neck are interrupted in the initial stages of the operative procedure. These lymphatic routes of tumor embolization are easily divided through the surgical exposure provided by the elevation of the medial skin flap.

The venous system of the breast drains chiefly in a medial direction to the internal mammary veins and cephalad to the axillary veins. These vascular routes of embolization should be divided at their most distal site and as early as feasible in the operative procedure. The division of the venous channels may be accomplished through the surgical exposure provided by the medial dissection.

The technique herein advocated for radical mastectomy is based upon two basic therapeutic features.

1. The elevation of the medial skin flap and the deep portions of the medial dissection can be executed with less traction and manipulation of tumor bearing tissues than can the lateral portions of the dissection.

(*Continued on next page*)

(*Continued from preceding page*)

2. Through the surgical exposure provided by the medial skin flap all of the available lymphatic and venous routes of tumor embolization can be divided before the extensive manipulations required in the lateral portions of the dissection.

Therefore it is recommended in the surgical treatment of breast cancer that the initial incision be that of the medial skin flap. Through the exposure furnished by the elevated medial skin flap all of the available lymphatic and venous channels of tumor dissemination are divided. Only after surgical interruption of the vascular routes of tumor spread should one proceed with the lateral skin incision and the deep portions of the lateral dissection.

Surgical Technique

A brief description of the technique follows. The medial skin incision and elevation of the medial skin flap are performed. This is done with little or no traction on the tumor bearing breast tissues.

The pectoralis major and minor muscles are divided at their origins, thus dividing the vascular routes to the anterior mediastinum. The apex of the axilla is opened just below the clavicle and the lymphatic vessels draining the axilla are divided.

Dissection then proceeds in a lateral direction along the axillary vein. The pectoralis minor muscle is severed from the coracoid process to expose the axillary fossa so that all the venous branches from the breast to the axillary vein may be divided.

During the preceding steps of the dissection all of the available vascular routes of tumor dissemination have been severed with minimal traction and manipulation of tumor bearing tissues in the breast and axilla. Further axillary dissection through this exposure is so simply performed that we continue the deep axillary dissection including the thoracodorsal and long thoracic nerves before making the lateral skin incision.

After packing the medial wound with wet pads the lateral skin incision and lateral skin flap are prepared. The pectoralis major muscle is cut at its insertion. The axillary dissection is then completed and the breast severed from the chest wall. The wound is sutured after thorough irrigation and insertion of suction catheters.

SUMMARY

Various methods are discussed which may be helpful in preventing metastatic spread of mammary carcinoma from the time the patient presents herself for diagnosis until completion of definitive treatment. A technique of radical mastectomy is presented, which attacks the vascular channels of cancer spread in the early stages of the operative procedure.

Pearl Coulter to Serve On National Advisory Committee

Mrs. Pearl Coulter, director of The University of Arizona School of Nursing, has accepted an invitation to serve on the 12-member National Advisory Committee for Public Health Training.

Mrs. Coulter, who will serve for four years, is the first Arizonan to become a member of the advisory committee. The group assists the U. S. Surgeon General in administering traineeship and health project grants.

Survival in a Thermonuclear War

6. *Types of Shelters*

Solomon Garb, M.D.

The advantage of corrugated steel over reinforced concrete for home shelter purposes is discussed. Steel, in general, is more readily available and economical. Important admonitions are to construct the shelter primarily as a SHELTER, thus eliminating the large expense associated with dual purpose shelters and to use conventional culvert type steel pipe rather than expensive custom built material containing unnecessary extras.

The present increasing worry over the initial effects of nuclear attack, i.e. blast, fire and heat, strongly support Dr. Garb's preference for a completely underground, rather than a basement style shelter.

THERE are several types of hydrogen bomb shelters that can be constructed at a reasonable cost on the property of the average home owner. This article describes the basic construction and requirements of such shelters. Other articles in this series will describe the necessary ventilating and sanitary systems.

STEEL SHELTERS

A corrugated steel pipe covered with 3 to 5 feet of earth offers a safe, inexpensive shelter (Fig. 1, *following page*). A complete shelter of this type should cost considerably less than a garage. Corrugated steel is at least five times stronger than an equivalent weight of plain steel. It usually comes galvanized, so that it is protected from rust.

Several shapes are available, and suitable for shelters. The round pipe offers the greatest volume per dollar. The pipe arch is slightly more expensive per cubic foot, but is more convenient for situations where a deep excavation is impossible. The half-oval or semicircle may be a good choice for ground which is very dry.

These items are manufactured in a wide variety of diameters and gauges. But for practical purposes only a few are suitable shelter material. The largest diameter pipes, which would be most comfortable, require a very deep excavation which is not practical in most soils without considerable expense. Furthermore, the resistance to blast decreases as the diameter increases.

As a reasonable compromise, several different sizes have been selected which should provide a sufficient variety for most situations. Tables I and II (*following page*) indicate the size of pipe that would make a suitable shelter for an average family of two adults and two teen-aged children, or two adults and three small children.

Any of these pipes or pipe arches have a large margin of extra strength and will resist not only a weight of many feet of earth but also an added blast overpressure from a nearby explosion.

If there is little or no warning before attack, these shelters can protect against fallout only.

The decisions as to whether round pipe or pipe arch is best and which diameter to use

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TABLE I. — FEATURES OF GALVANIZED CORRUGATED STEEL PIPE NECESSARY TO PROVIDE SUITABLE SHELTER FOR AN AVERAGE FAMILY

		— 12 Gauge —	
Diameter (Inches)	Necessary Length (Feet)	Dollar Cost* (approx-mate)	Weight (Pounds)
48	26	338	1,780
54	20	313	1,570
60	16	274	1,394
72	12	246	1,236

TABLE II. — FEATURES OF GALVANIZED CORRUGATED STEEL PIPE ARCH NECESSARY TO PROVIDE SUITABLE SHELTER FOR AN AVERAGE FAMILY

			— 12 Gauge —	
Span (Inches)	Arch (Inches)	Necessary Length (Feet)	Dollar Cost* (Approxi-mate)	Weight (Pounds)
72	44	18	326	1,566

*Main pipe only. End closures and entrances not included.

have to be based on the amount of land available, the nature of the soil, and the accessibility of the site to motorized excavating machines. It is almost impossible to dig a suitable hole by hand.

In most cases, the hole can be dug and the shelter placed and then covered by earth by a machine for a total cost of about $100. It would be best to request a local excavating contractor to take the job and to ask him whether or not his machines can reach the site and dig holes of the proper depth, width, and length.

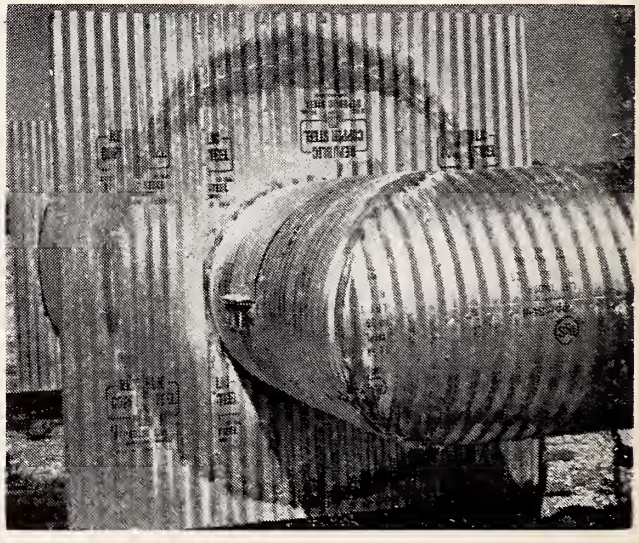
If possible, a local engineer also should be consulted. His fee usually will be quite reasonable.

It is always possible to put a pipe or a pipe arch in a shallow excavation, or even on the surface of the ground, and cover it with earth. In some areas with high water tables, this will be necessary.

The corrugated pipes and pipe arches may be purchased from local dealers or through the following manufacturers: Armco Drainage and Metal Products, Inc., Middletown, Ohio; Wheeling Corrugating Co., Wheeling, West Virginia; United States Steel Co., 525 William Penn Place,



FIG. 1 Corrugated steel pipe



Pittsburgh 30, Pennsylvania, and Republic Steel, 2318 13th Street, Canton 5, Ohio.

In the state of Arizona, corrugated steel pipe shelters may also be ordered from Consolidated Western Steel Division, W. S. Steel Corp., 600 W. Grant St., Phoenix, and Garland Steel, 1500 S. 7th St., Phoenix. They should be able to build them to order to fit any individual needs at a reasonable price.

The ends of each pipe or pipe arch should be sealed with galvanized corrugated sheet steel at least 10 gauge thick with a small hinged door about 2 feet wide and 2 feet high cut into one end. They should be ordered from the manufacturer with the order for the pipe. They can be attached with devices furnished by the steel company, with a series of large angle irons, or by welding. Right of way marker posts welded in place can be used to strengthen the end-closure.

It will prove easiest to do all construction work on the pipe when it is above ground.

Corrugated pipe or pipe arch should never rest directly on rock or concrete. There must be at least an 8-inch layer of earth between the pipe and any ledge of rock.

When the pipe or pipe arch is placed in the excavation and covered, it is important to tamp in the earth at the sides solidly. It will be best to have the loose earth filled in up to about three-quarters of the height of the pipe and tamped in, and then to have the remaining fill added. Water is considered unsuitable for packing the earth around corrugated pipe.

The manufacturers also recommend another method of assuring maximum strength from their pipes. Steel arches or wood jacks are used to deform slightly the round pipe into an oval with the vertical axis the longer.

After the pipe is in position and the earth is filled in, the struts or jacks are released allowing the pipe to spring back and to exert pressure against the earth at the sides. This increases greatly the resistance of the structure to pressure from above.

The pipe can be ordered already deformed at an additional cost of only $1.00 to $2.00 per linear foot.

Entrance

The entrance to the shelter should be a passageway with at least one angled turn. It should be at least 8 and preferably 10 to 12 feet long and should slope down to the shelter.

If possible, it should be made of 16 gauge corrugated galvanized steel pipe, 36 inches in diameter. It can be ordered from the steel company already fabricated to fit exactly the main body of the shelter. In some cases it will be possible to make such an entrance a direct extension of a basement or garage (Fig. 2 *following page*). This is a distinct advantage. Another type of entrance is shown in Fig. 3 *following page*.

Also, there should be a hinged cover which can be opened or closed from within the shaft. The cover can be made of sheet steel or corrugated steel. It should have a lip extending around the pipe. It too can be ordered from the pipe manufacturer.

An emergency exit can be added if desired.

Protection Against Water Seepage

In some cases, radioactive rain may fall soon after an explosion. In other areas, bombs may explode in bodies of water. Unless the shelter is protected against water, the radioactive rain might seep through the sand and harm the occupants of the shelter.

Fortunately, it is a rather simple matter to protect the shelter against such rain. A wide sheet of polyethylene covering the shelter and anchored securely by sandbags or sand will give good protection. Because this material is inexpensive, it is practical and worth-while to use several layers, each separated by 2 or 3 inches of sand.

The polyethylene should be placed near the surface, not near the steel. If possible, there should be 3 feet of earth between the plastic and the steel. Enough topsoil can be placed over the plastic to allow grass to grow.

Polyethylene of sufficient thickness in widths up to 20 feet can be purchased from Montgomary Ward & Company at a reasonable price. At least 4-mil or preferably 6-mil polyethylene should be used.

Should Shelter Be Waterproof?

Whereas it is advisable to keep water away from the shelter, it is seldom advisable to have the shelter proper watertight.

In a specific rare situation, it would be helpful to have a watertight shelter. That would be a case in which a shelter is buried, so that the bottom of the shelter is approximately 1 to 2

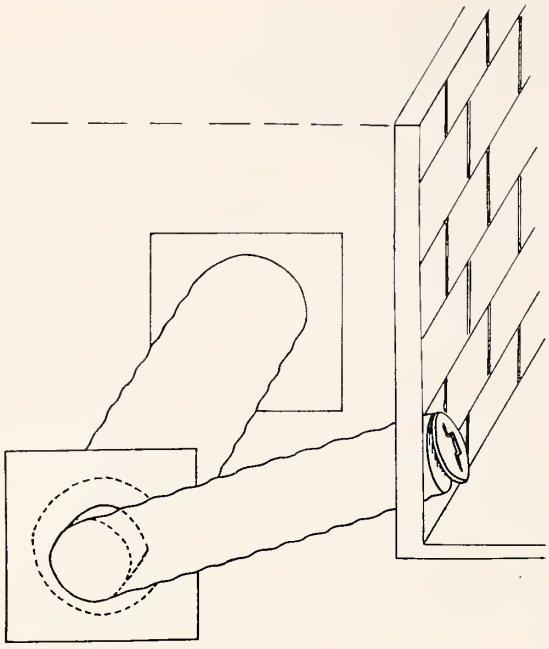


FIG. 2 Basement or garage entrance

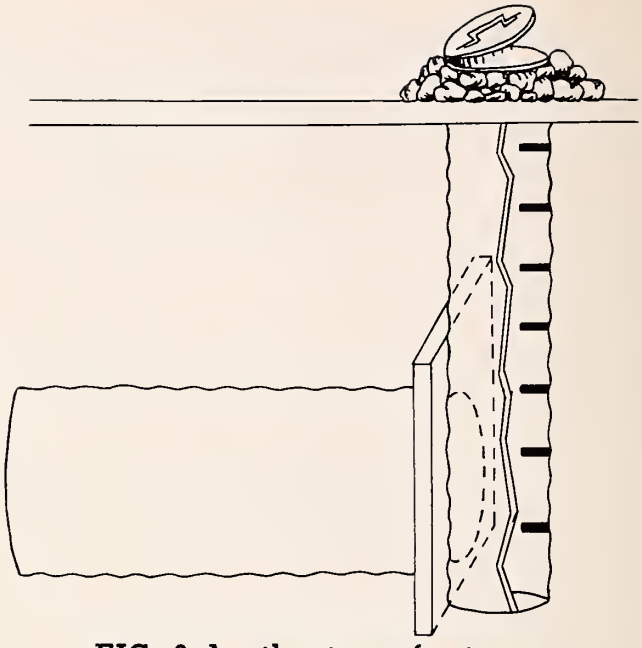


FIG. 3 Another type of entrance

feet lower than the water table surrounding it. In such a case, having a watertight shelter will prevent the ground water from seeping in to the shelter from *below* and making the inhabitants uncomfortable.

If this situation of high water table is not present, a watertight steel shelter offers no particular advantage, and has at least one disadvantage.

If radioactive materials, carried by run-off water, were to penetrate through the earth and the polyethylene to the outside of the steel shelter, it would make little difference if it dripped through into the shelter proper. The steel itself is too thin to afford any appreciable protection.

If the shelter is made watertight, and if there are ways in which ground water can get to the shelter, the owner of the shelter will have no way of knowing it.

If the shelter is not watertight, and there are ways for ground waters to penetrate to it, then, after a heavy rain, before a thermonuclear attack, the owner of the shelter will see water dripping inside. He will then know that some sort of corrective action must be taken to keep the water away from the shelter.

That corrective action might be the installation of more polyethylene. It might be a change of the grading of the earth above, or anything else. Thus, except in the one situation above, a waterproof shelter does not afford any advantage and presents a certain disadvantage.

The discussion should not, however, produce any undue alarm about the possibility of radioactive materials penetrating into a shelter through the earth cover.

In most situations this would not be a serious problem at all, since studies have shown that the radioactive particles which are most dangerous are quite large and move through packed earth very slowly. Even if there were a heavy rain immediately following a thermonuclear attack, the likelihood is that most of the radioactive particles would only move about an inch through the upper layers of the soil.

With well packed soil, there is practically no danger of radioactive materials getting close to the shelter for the early days after any attack, when the danger is greatest.

The only situation in which an appreciable danger would be present from radioactive water seepage would be one in which there are cracks, fissures, or channels in the earth above the shelter, which would allow water to pour through rather quickly. In most cases, these things can be prevented by packing the earth.

Concrete Shelters

A poured concrete bomb shelter is not a suitable project for the home handyman. It must be built by a reliable contractor, preferably un-

der the supervision of an independent engineer or architect.

In general, the shelter should be designed and built in conformity with the building code requirements for reinforced concrete and the designs of the Civil Defense Administration. The exact design drawings are available at a cost of only 5 cents from the Superintendent of Documents, Washington 25, D.C.(1)

Changes can be made, of course, in accord with local needs provided there is no weakening of the structure.

The concrete must be mixed, poured, vibrated, and cured properly. It must never be allowed to freeze before it is cured. Steel reinforcement using deformed steel bars must be prepared according to strict specifications.

In the roof slab, the longitudinal bars are spaced every 12 inches whereas the horizontal bars are only 4½ inches apart. Note that these are thick No. 4 steel bars about ½ inch in diameter, not the reinforcing mesh which is used to reinforce driveways and which looks like a wire frame. Even if thicker concrete is used, the reinforcing bars must still be present.

All the concrete in this shelter is reinforced. This includes roof, walls, floor, and interior partitions. The reinforcing bars run in two planes to make a grid pattern.

The amount of reinforcing bars needed for the concrete of the simple shelter is approximately 1,300 feet and weighs about 870 pounds. The concrete itself will weigh about 45,000 pounds. The earth cover weighs still more.

The structure will be much stronger if all walls are poured as a single unit. Since the roof slab is thin and weak, it also should be poured as a single unit.

There are many pitfalls in the construction of a concrete shelter which make continual supervision of the job essential. For example, after excavating the earth for the shelter, the bottom of the excavation must be leveled and thoroughly tamped before the slab is poured. Otherwise, there may be uneven settling which could crack the structure.

Other details relating to the mixing, pouring, and curing of the concrete can be adequately supervised only by someone experienced in concrete construction.

Costs

The costs of a reinforced concrete shelter are high. It is quite misleading to calculate the cost of the raw materials and assume that the total cost will be in the same range. The major cost of concrete work is not the concrete but the forms which must be properly built, placed, and then removed. Highly skilled labor is needed, and the hourly wage is high.

In the case of a concrete bomb shelter, the weight of concrete will require extra strong supports which will have to be placed in a cramped space underground. This adds to the cost.

The picture might be quite different if there were a government shelter building program. Then, prefabricated reusable forms would be available, and shelters could be constructed on an assembly line basis. This would bring costs down and as a result concrete shelters could be provided at a cost of under $1,000 per family.

If a decision is made to have a poured concrete bomb shelter, it seems essential that an independent engineer or architect be engaged to supervise and inspect the contractor's work. To the inexperienced, concrete placement may seem like a simple thing. However, there are many pitfalls in concrete work. If there should be any defect in the concrete, the entire structure might be dangerous as well as useless.

Problems Involved

There are many problems involved in concrete mixing and placement. The mix proportions may not be ideal. The sand, of coarse aggregate, may not be perfectly clean. Excessive water may be used. Vibration may not be done properly. Even the angle at which concrete is poured from a mixer or wheelbarrow into the forms can greatly affect its strength.

The concrete manual of the U.S. Department of the Interior points out that if concrete is poured into a deep form at an angle and strikes the side of the form on the way down, separation of the components will occur(2). This will weaken the base of the entire structure.

These are only a few examples of what can go wrong in concrete construction. They illustrate the importance of expert professional supervision of the building of a poured concrete shelter.

It would be an error to assume that a builder or contractor experienced in pouring concrete footings or concrete driveways would necessarily be capable of pouring a concrete bomb shelter

properly. It is relatively simple to pour shallow layers of concrete directly onto the ground. However, a bomb shelter wall is a much more difficult and complex proposition.

The floor and walls of an underground concrete bomb shelter should be a minimum of 8 inches thick. The roof slab must be not less than 6 inches thick. As mentioned previously, all the concrete must be strongly reinforced with steel bars. These dimensions can, of course, be increased but only at a tremendous increase in cost.

Under certain circumstances, the roof, instead of being 6 inches of concrete covered by 2¼ feet of earth, might be 20-inch thick concrete. When this thickness is used, the concrete is usually placed as two separate layers of 10 inches each.

INTERIOR SHELTERS

Several government publications describe basement corner shelters, interior room shelters, and other shelters which may be incorporated into existing homes(3, 4). The plans for such shelters are frequently reproduced in newspapers and magazine articles. Although such shelters are much better than no shelter at all, they are less satisfactory than an outside underground shelter.

It is difficult to support safely the required weight of earth or concrete in the average basement. If the shelter walls and ceiling are the full 3 feet thick, the shelter will weigh 50,000 to 100,000 pounds. This weight probably will crack the house foundations unless the entire basement floor rests on bedrock or unless additional footings are poured. This is a costly and difficult task in an existing house.

Most basements are relatively shallow. Therefore, it is impossible to have a 3-foot thick ceiling and still have much room in the shelter. In such cases, the Federal Civil Defense Administration advises that the floor above be covered with sandbags after the floor joists are strongly braced.

However, this, in effect, means taking a room away from the house. Therefore, most people are not likely to build such a shelter until an attack is imminent. By then, it may be too late, since it is not easy to move such enormous masses of earth.

The energy and expense of building this type of shelter would usually be spent better in making an underground shelter where possible.

Nevertheless, there are those who live in urban areas who do not have the land for underground shelters. Although the basement or interior room shelter is not ideal, it can give enough protection to save most people's lives if properly designed and built.

It is difficult to calculate the survival chances in basement and interior shelters because so much depends on the basic structure of the house.

Consultation Needed

If the decision is made to build a basement or interior room shelter, an architect should be consulted. Without his advice, it would be easy to ruin the entire house.

The basement or interior room shelter needs all the accessories required for other shelters and a supply of food, water, and other items.

From time to time, government agencies issue press releases describing different kinds of interior shelters. Unfortunately, they use such general terms that some people may be confused about the relative degree of protection provided.

Before deciding on a particular shelter, one should know the amount of protection to be provided. This can be calculated readily from the half-thickness values given in the third article in this series. (Arizona Medicine, June 1962.)

Occasionally, suggestions are made that a structure be built for a dual purpose: to serve as a bomb shelter and also for other uses. Perhaps in large reinforced concrete structures this may be practical. However, for a family shelter it is not. Attempts at a dual function are likely to result in inadequate protection or may result in greater expense rather than savings. Therefore, it is recommended that the shelter be designed solely as a shelter.

A basic principle behind the use of a basement shelter is that anything that is below the level of ground will not receive direct radiation from particles on the ground. Thus a simple foxhole will give a great deal of protection.

The radiation which penetrates to a basement or to the bottom of a foxhole is mainly radiation which bounces back from the sky. This is some- is about 1/10 of the radiation level at the surface times known as "sky shine" and in general this of the ground.

Any structure which is built in a deep base-

ment automatically has the protection factor afforded by the underground location multiplied by the protection factor in the walls and ceiling of the shelter proper. These protection factors multiply provided that there are no weak links. Thus the basic OCDM family fallout shelter made of 8-inch thick concrete blocks has a basic protection factor of ten. However because it is built in a deep basement the total protection factor becomes ten times ten or 100.

The protection factor afforded by a basement applies only to those basements which are well below ground level and do not have a large number of windows. The so-called walkout basements do not afford this degree of protection nor do basements which have a large number of windows in a playroom.

Even if a shelter were built in a far corner of a basement of that type, the protection factor would be considerably less than in the case of a similar shelter built in a basement that is underground on all four sides. Anyone who is in doubt about the suitability of his basement for construction of a fallout shelter should consult a local civil defense official and get authoritative advice.

In the event that a basement does not give the needed protection factor of ten, any fallout shelter constructed in such a basement will have to be considerably thicker than that recommended by the OCDM.

Other Methods

There are other ways of handling the fallout shelter problem in a basement which lend themselves to situations in which cost is a serious problem. A reasonably satisfactory fallout shelter can be constructed in a basement substituting crushed rock for concrete blocks.

Concrete block generally costs from $20 to $25 per ton, whereas washed, crushed rock costs from $2 to $3 per ton. Crushed rock has the same amount of voids as sand. Its half thickness is 3.3 inches compared to 2.2 inches for concrete. Crushed rock may be used in the building of a basement shelter in the following manner:

1. Mark off an area in which the shelter is to be built in a corner of the basement.

2. Brace each of the floor joists by placing a stud underneath it at the seven foot mark and nail securely. Thus the total unsupported span of the joist is reduced to seven feet. This increases the weight carrying capacity of the joist approximately four times.

3. Nail a strip of expanded metal lath to the underside of a row of joists. These strips range from 24 to 30 inches wide and should be nailed securely using J type nails which are obtainable from most lumber dealers. A strip of wood can be nailed underneath to help provide further support.

4. Crushed rock is then shoveled into the space between the joists and is held up by the strip of metal lath.

5. Another strip of metal lath is nailed in place and more crushed rock put in.

6. This procedure is repeated until the entire space between the joists overhead has been packed with crushed rock.

7. The metal lath is tapped gently from below to distribute the crushed rock more evenly.

8. Sidewalls are made, using wood, corrugated steel or any other strong material which may be available, as permanent forms. They should be at least 12 and preferably 18 to 36 inches apart. The spaces between the two walls are then filled with crushed rock.

In this type of construction, the combination of crushed rock and metal lath is used because it prevents moisture from collecting and condensing around the joists. If water should remain around those joists they would eventually rot and the house would collapse. However, the voids in crushed rock are relatively large and metal lath is completely porous. Therefore any water vapor which might condense in the area between the joists would drain down. The likelihood, however, is that there would be no appreciable condensation because of good ventilation throughout that area.

If desired, this procedure may be used in combination with the OCDM family fallout shelter plans and a shelter with a protection factor of 1000 or better can be built.

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Formula: Each 'Eskatrol' *Spansule* sustained release capsule contains Dexedrine® (brand of dextro amphetamine sulfate), 15 mg., and Compazine® (brand of prochlorperazine), 7.5 mg., as the dimaleate.

Recommended Dosage: One 'Eskatrol' *Spansule* capsule daily, taken in the morning.

Side Effects: Side effects (chiefly nervousness and insomnia) are infrequent, and usually mild and transitory.

Cautions: Clinical experience has demonstrated that 'Eskatrol' (containing the phenothiazine derivative, prochlorperazine) has a wide margin of safety and that there is little likelihood of blood or liver toxicity or neuromuscular reactions (extrapyramidal symptoms). The physician should be aware, however, of their possible occurrence.

'Eskatrol' *Spansule* capsules should be used with caution in the presence of severe hypertension, advanced cardiovascular disease, or extreme excitability.

Prescribing information adopted Jan. 1961

Smith Kline & French Laboratories SK&F

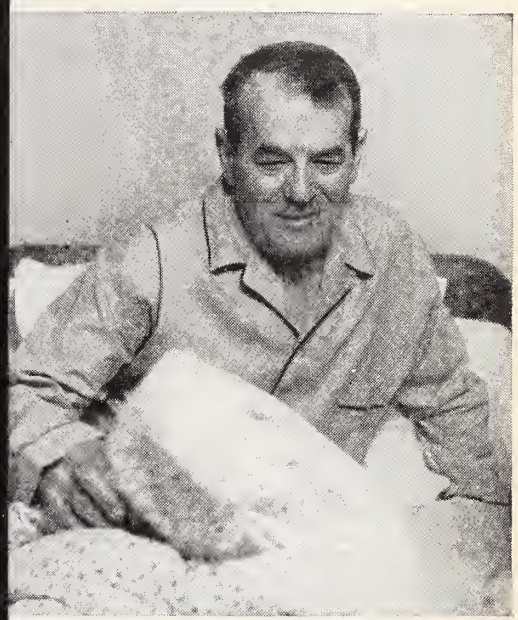


Thanks to 135 tiny "doses" throughout the

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ight, the arthritic wakes up comfortable



Morning stiffness may be reduced or even eliminated as a result of therapy with the only steroid in long-acting form. And the slow, steady release of steroid makes it possible in some cases to reduce the frequency of administration and/or the total daily steroid dosage.

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Each hard-filled capsule contains Medrol (methylprednisolone) 4 mg. Also available in 2 mg. soft elastic capsules.

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Each teaspoon (5 ml.) contains:

Codeine phosphate	5.0 mg.
Neo-Synephrine® hydrochloride (brand of phenylephrine hydrochloride)	2.5 mg.
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Potassium iodide	75.0 mg.



Bright red, pleasant tasting, raspberry flavored syrup

Dosage:

Children from 6 months to 1 year, 1/4 teaspoon; 1 to 3 years, 1/2 to 1 teaspoon; 3 to 6 years, 1 to 2 teaspoons; 6 to 12 years, 2 teaspoons. Every four to six hours as needed.

How Supplied:
Bottles of 16 fl. oz.

Available on prescription only.

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Winthrop LABORATORIES
New York 18, N. Y.



Keep the rheumatic man in motion!

DELENAR loosens the rheumatic grip on muscles and joints, starts them functioning again—first by a direct relaxant action on skeletal muscle, again by its specific analgesic effects. And, while immediate symptomatic relief restores motion, underlying inflammation is reduced with the low-dosage corticosteroid.

Now you can restore comfortable motion safely, surely with DELENAR in rheumatoid arthritis/traumatic arthritis/early osteoarthritis/spondylitis/fibrositis/myositis/bursitis/tenosynovitis.

Formula:

Orphenadrine HCl	15 mg.	Proved muscle relaxant to relax spasm
Aluminum Aspirin	375 mg.	Fast analgesic relief of motion-stopping pain
Dexamethasone*	0.15 mg.	Low-dosage anti-inflammatory steroid

For complete details, consult latest Schering literature available from your Schering Representative or Medical Services Department, Schering Corporation, Bloomfield, N. J. **Bibliography: 1.** Ernst, E. M.: Pennsylvania M.J. **63**:708 (May) 1960. **2.** Settel, E.: Clin. Med. **7**:1835 (Sept.) 1960.

*DERONIL® brand of dexamethasone

H-415

loosens the rheumatic grip on muscles and joints

brand of antirheumatic preparation

Delenar®

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"What the American Public Wants in Health Care"

(Following is a review by Dr. Leslie B. Smith of Dr. Jack C. Haldeman's article, "What the American Public Wants in Health Care," as published in "Public Health Reports," Vol. 77, No. 4, April, 1962. Dr. Haldeman is Assistant Surgeon General. — Ed.)

"The public's wants are not always the same as its greatest needs." Because of this discrepancy, the author relates that it is the duty of health officials, even with their popularity at stake, to encourage public support for the necessary programs, thus assuming the responsibility of leadership rather than following public preference.

The author's challenge to the health officials applies equally to all physicians and all those who are responsible for the total medical care.

Most all people consider health a priceless possession and approve it in much the same spirit they endorse virtue and religion.

The conflict between what people profess to believe and what they actually practice presents a number of paradoxes. As an example he cites the lack of public concern about accident prevention, which claims more lives than most diseases, as contrasted to their high interest in low incident diseases as poliomyelitis and rabies.

The public is often inconsistent in their attitudes toward certain health matters. There was a high public interest in the development of a poliomyelitis vaccine which they supported voluntarily by raising large funds. Yet, after its discovery, there was amazing difficulty in convincing certain segments of the public to be vaccinated.

The motivation of the public, private physicians and public health officials may differ. Even when there is a serious health threat most people will not act unless they relate it to themselves.

The community is the health official's patient. Hence, he is concerned about the effect of the prevalence of the disease, whereas for the private practitioner the severity of the disease is the

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CONTRIBUTIONS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules should be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English or Spanish, especially with regard to construction, diction, spelling and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words.

4. Read and re-read the manuscrapt several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Exclusive Publication — Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

7. Reprints will be supplied to the author at printing cost.

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crucial factor. He cites as an example the apathy of the private physicians about the 1957-58 Asian influenza epidemic.

In his discussion of the lack of concern of the private physician about the Asian influenza the author states: "In other words local physicians did not share the concern of the epidemiologists, despite ample information in the public press." He does not realize that doctors do not consider "the public press" to be the proper media for the dissemination of scientific knowledge.

Dr. Haldeman also seemed to be unaware that doctors are frequently indifferent to attempts to mold their medical attitudes through public press, and that in health matters it is disdainful to coerce doctors by quasi-scientific public opinion and demands.

PATIENTS are influenced by their physician's opinion. In support of this tenet, he quotes from studies which show the similarity of reaction of the public and doctors toward the Asian influenza vaccination program: that if the patient's doctor favors progressive care so will the patient, and that patients do not choose their physicians because they happen to have privileges in a specific hospital. Instead they go to hospitals chosen by their doctors.

The wants of the public can best be determined by analysis of the health measures rejected or approved by the congress and state legislators; the interest and success of voluntary health agencies, civic groups; the expression of public opinion by the mass media; the mail received by health officials; health status; and personal observations.

To best feel the public pulse it is necessary to be an active member of society.

Dr. Haldeman has drawn upon his 20-plus years of experience in the hospital and public health fields to determine what he believed the public wanted. They want more long-term care facilities which he believes need to be integrated with short-term hospital facilities covering the entire spectrum of medical facilities. This to include coordinated home care, homemaker service, and home nursing services.

The public now recognizes the need for replacement or modernization of our older hospitals.

"The public is demanding that unwarranted increases in hospital costs be forstalled." This he believes can be done by general hospitals providing out-patient care as it is now providing in-patient care; by extending care to the home; long term care for the mentally and chronically ill, continuity of care for patients transferred to paramedical institutions; and offering preventive services and teaching health care. He also suggests further research to develop more efficient methods.

"We should plan tomorrow's hospital as the focal point of community health services in a planned hospital system. This plan should be developed by a local hospital agency." It is to be noted that he specified *local* hospital agency. The public's additional wants include more adequate facilities for care of the mentally ill, additional general hospitals in certain areas.

Although Dr. Haldeman's reprint was based on a presentation which he made in April 1960, it is of interest that even in 1962 he has not included as one of the public wants the providing of medical care for the aged or any other segment of our society through the social security system or any other federal bureau.

Leslie B. Smith, M.D.

PATRIOTISM

THE Navajo maiden, tending her flock in Monument Valley, is developing a different devotion to the land than is the bespectacled orator of a city high school. We want our children to have patriotism. But this is an outsized generalization. Patriotism is made up of all our impressions and memories. They are particular and very personal.

The small country of the young people is a home, a neighborhood, a schoolground, a church, a shopping center. Is it a country in which they are beloved and which, in turn, they will love?

The child is exposed to a frightening and unnecessary ugliness.

Instead of a sidewalk there is an unbordered brown path. It is sparsely strewn with gravel and crumpled cigarette packages. Paralleling the path is a urinary-looking irrigation ditch. It is

scarcely concealed by its gunny sack underwear of dry weeds.

Anonymous iron-shouldered beetles are rushing past, their unblinking glass eyes afraid to look up. On the corner the service station crouches like a spider, the yellow pumps its fangs. It has caught three or four of the beetles and is sucking the juices from them.

Overhead are the stringy black hairs of the power and telephone lines. And there is the street light. It is a long probe with bulbous blue-white tip. It is an obscene instrument from the sleeve of an unseen abortionist. The mailbox is a squatting fetus with gaping, toothless mouth.

THE stores are as drab as a row of empty cardboard cartons. Children and flies drink soda pop from a tilted wooden honeycomb. There is no shade.

The face is without eyebrows or gentling curves. There are only squares of purple inflammation and reddish eczema. There are no archways or circles.

And the use of makeup is hebephrenic, ghastly. In blue, white, orange and green shimmers the advertisement on the hard back of the bus stop bench. The big bloody hands of billboards call loathsome attention to the aluminum crutches which hold them up. Tin saddles without a horse are the A-shaped signs at the curb. The parking areas are black hangnails in the cuticle of unmanicured streets. Inverted triangles of colored paper make an even cheaper necklace than a string of electric light bulbs.

Our tallest buildings were designed with alphabet blocks from an underprivileged nursery. Other architecture is an oversized, isinglass telephone booth — or a square plastic box from which the corsage has been removed. The thoroughfares are gray suspenders. And Park Central wears a hair net in the summer.

Through rimless spectacles the hard glass doors stare coldly at the children. Wherever there are music and dancing there is the curt rejection, "No Minors Allowed."

The mariachis have gone back to the quieter, more harmonious tones of their village. Their music was torn on the cruel barbed wire atop industrial fences. On the flat concrete in front of the capitol they met a sour landlord with club and gun.

The city is a dirty table cloth. Cigarettes are still smouldering in the ash trays. The centerpiece bowl is empty. There are no fountains or gardens. The mountains are unoccupied chairs, keeping their dignity.

The sound of the city? It is as if you should go back and jiggle the short lever of the toilet.

Seriously, there are five thousand ugly signs and billboards on Central Avenue. Every one is without dignity or taste. They proclaim that the people inside must be hateful and vulgar, marked down to half price.

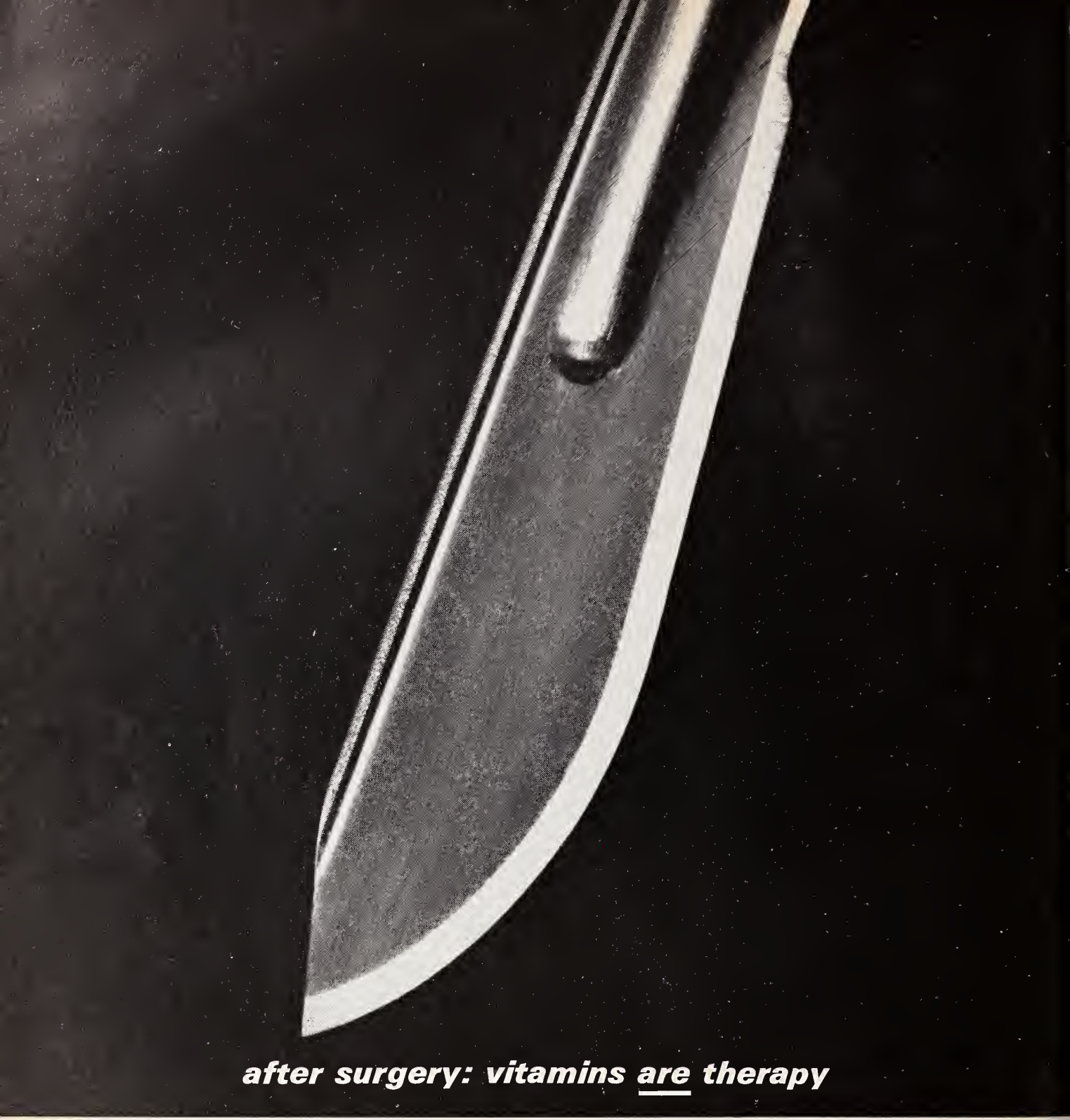
The children are never invited into the living room. The sleek purity of manufacturing plants is recessed and carefully guarded. The children are shooed away from the elegant interiors of office buildings; and they do not know what their fathers do inside. The children are like the mariachis with their hurt, uncertain smile.

I wonder how much it would cost to put the parking lots underground and to landscape the shopping centers. Bells are more endearing than the sirens of Saturday noon. A small bronze plaque would suggest the culture and refinement of the proprietor. A low wall with ornate and open gate is more inviting than a prison type, chain-like fence.

The ultimate patriotism is to provide places where the children can watch the grown-ups at work. The ultimate patriotism is to shut up until you have furnished music and a place for the young people to sit and talk.

WILLIAM B. MCGRATH, M.D.

Over $210,000 worth of drugs was contributed by member firms of the Pharmaceutical Manufacturers Association for victims of the disastrous earthquake in Iran in September, 1962.



after surgery: vitamins are therapy

Nutritional supplementation is basic to postoperative care. Therapeutic allowances of B and C vitamins help meet increased metabolic requirements and compensate for stress depletion. STRESSCAPS can set the patient on a more favorable course and contribute to full recovery. Packaged in decorative "reminder" jars of 30 and 100.

Each capsule contains:	
Vitamin B_1 (Thiamine Mononitrate)	10 mg.
Vitamin B_2 (Riboflavin)	10 mg.
Niacinamide	100 mg.
Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B_6 (Pyridoxine HCl)	2 mg.
Vitamin B_{12} Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

Recommended intake: Adults, 1 capsule daily, or as directed by physician, for the treatment of vitamin deficiencies.

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

STRESSCAPS®

Stress Formula Vitamins Lederle

Correspondence

Medicare Legislation

To Dr. Leslie B. Smith:

I am indeed pleased to know that you approved of my vote on the medicare legislation.

Should the Congress find the present law (the Kerr-Mills Act) insufficient to meet the needs of those who did not have an opportunity during their productive years to be included in a medical-hospital insurance program, I am confident that instead of hastily conceived legislation, a way will be found to meet this need without disturbing the traditional doctor-patient relationship which has provided the American people with the best medical care in the world.

CARL HAYDEN
United States Senate

Local Organization

To Clarence E. Yount, M.D.

Dear Mr. Yount:

Lately I have heard a lot of complaints from patients saying, "I sure like you, doc, and also my family doctor. But I sure hate that AMA." By talking to lots of patients I have discovered that this is a very common attitude of a large majority of people.

If I had some time or energy or influence, I would stage a vigorous campaign that funds such as you are collecting here be set aside for our state organization and such for our own TV and radio show and that you keep on hand the best speaker in the state to combat such talks as that given by President Kennedy.

For example, a much more effective type of program would have been fifteen minutes sponsored by the National AMA, followed by fifteen minutes from each state organization in its own state. In this way the little man would have felt his family doctor nearby was also talking to him.

Why I am writing you this letter I do not know, because I know that national organizations do not take kindly to the local division's having any authority to do anything on its own.

Most sincerely yours,

E. G. BARNETT, M.D.

"Dear Doctor:"

In your busy night-and-day preoccupation with other people's lives, it is very difficult for you to find time to think about your own future.

Yet face it you must for the sake of your family.

We urge you to join with our many other friends and customers of the medical profession, and arrange for a visit—with your lawyer—to our Trust Department.

Discuss your estate plans in detail. Let an experienced Trust Officer show you how the group-judgment of specialists in the Trust field will insure your estate being handled soundly, economically—and to the letter of your Will.



VALLEY NATIONAL BANK

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Resources $785 Million

...WITH 'METHEDRINE' SHE CAN HAPPILY REFUSE!



Controls food craving, keeps the reducer happy — In obesity, "our drug of choice has been methedrine . . . because it produces the same central effect with about one-half the dose required with plain amphetamine, because the effect is more prolonged, and because undesirable peripheral effects are significantly minimized or entirely absent." Douglas, H. S.: West.J.Surg. 59:238 (May) 1951.

'METHEDRINE'®

brand Methamphetamine Hydrochloride

Supplied: Tablets 5 mg., scored. Bottles of 100 and 1000.

Literature available on request.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

Douglas C. Terpe, M.D.

1931-1962



DOUGLAS C. TERPE, M.D., 30, resident in general surgery at Maricopa County General Hospital, Phoenix, died August 21, 1962 of a myocardial infarction.

Dr. Terpe was born a premature twin in Wolf Point, Montana, October 4, 1931. He graduated from Wolf Point High School in 1949, after which he enrolled in Jamestown College, Jamestown, North Dakota.

Before entering medical school in 1957, he married his college sweetheart, the lovely Joanne Abels of Britton, South Dakota. She remained his faithful and devoted companion throughout the trying five years to come.

After completion of the first two years of medical school at Grand Forks, North Dakota, he transferred to Baylor University College of Medicine where he received his M.D. in 1961.

Doug's adventuresome spirit abounded in all his endeavors. A veteran of the Korean conflict (1950-1952), he was awarded the army occupation medal while serving in the Army Medical Corps in Germany.

Despite having had ear surgery for stapes mobilization and a mastoidectomy, and still later an exploratory thoractomy for a mass in the right chest, diagnosed as Hodgkin's Disease, his spirit remained undaunted. He felt these encounters with disease would give him insight and understanding regarding other patients' illnesses. With his usual good humor, he often remarked "I am learning medicine from the patient's viewpoint."

He completed a rotating internship at Maricopa County General Hospital, Phoenix, from July 1, 1961 to June 30, 1962. Remaining relatively asymptomatic from the lymphoma, his drive was unrelenting. He was just one- and a half months into his residency when he had his first cardiac attack, on his fifth wedding anniversary, August 16.

Dr. Terpe was held in high esteem by both fellow house officers and the attending medical staff.

> "He achieved an enviable record in his chosen field of medicine in the service of Maricopa County General Hospital."—MacDonald Wood, M.D.
> Chief of Staff.
>
> "His intelligence and humility were extraordinarily well reconciled so that he could be a true physician."—Fred Foster
> Hospital Director.

Classmates of the College of Medicine of the University of North Dakota, have started a memorial fund for medical education. A memorial at Jamestown College is also in the offing.

Amid our tears of sorrow, we do thank Thee, dear Heavenly Father, that Doug did have the knowledge of sins forgiven and we pray Thee to lift our hearts with the hope of the glorious and eternal reunion in Heaven through Jesus Christ, our Lord. Amen.

RAYMOND E. HAMMER, M.D.



Put your low-back patient back on the payroll

Soma relieves stiffness —stops pain, too

YOUR CONCERN: Rapid relief from pain for your patient. Get him back to his normal activity, fast!

HOW SOMA HELPS: Soma provides direct pain relief while it relaxes muscle spasm.

YOUR RESULTS: With pain relieved, stiffness gone, your patient is soon restored to full activity—often in days instead of weeks.

> Kestler reports in controlled study: *Average time for restoring patients to full activity: with Soma, 11.5 days; without Soma, 41 days.* (*J.A.M.A. Vol. 172, No. 18, April 30, 1960.*)

Soma is notably safe. Side effects are rare. Drowsiness may occur, but usually only in higher dosages. Soma is available in 350 mg. tablets. **USUAL DOSAGE: 1 TABLET Q.I.D.**

The muscle relaxant with an independent pain-relieving action

SOMA®

(carisoprodol, Wallace)

Wallace Laboratories, Cranbury, New Jersey

Dr. William Duncan Spining Honored for Service

DR. William Duncan Spining, medical director of Sage Memorial Hospital, part of the Ganado Mission, Ganado, Arizona, recently completed twenty-five years of service for the Board of National Missions, United Presbyterian Church. Dr. Joseph A. Poncel, Ganado superintendent, presented a gold service pin and a certificate to Dr. Spining in a ceremony at Ganado Mission.



Dr. Spining

Dr. Spining heads the Sage Hospital Staff of over fifty members, one-third of whom are Navajo Indians. More than 25,000 patients were treated in the hospital and clinics last year.

Dr. Spining went to Sage in 1937 as an assistant physician following an internship at the University of California Medical School in San Francisco. He has done further study at Hollywood Presbyterian Hospital and at Cook County Graduate Medical School in Chicago.

A medical missionary, Dr. Spining was born in Chile in 1908 and came to the United States while he was in his teens. His parents, the Reverend and Mrs. Charles Martin Spining, were Presbyterian missionaries in Chile.

During the past twenty-five years, the medical doctor has more and more replaced the Navajo medicine man.

Dr. Spining has written, "As doctors and nurses in the Master's name and showing forth His love, we can through the power of the Holy Spirit bring comfort, assurance, peace and faith where there has been fear, doubt, and the darkness of superstition."

National Scholarships Awarded Arizona Students

FIVE Arizona students have been awarded 1962 National Foundation Health Scholarships, Basil O'Connor, president of the March of Dimes organization, has announced.

More than 500 scholarships are offered nationally each year to qualified young Americans who are interested in careers in medicine, nursing, physical therapy, occupational therapy or medical social work. Each scholarship has a total value of $500 a year for four years of college or university education.

The Arizona National Foundation Health Scholarship recipients are:

Medicine

John Quentin Baker 1010 Lemon Street Tempe, Arizona	University of Washington School of Medicine Seattle, Washington

Physical Therapy

Vivian Cleda Blair 1606 Oregon Prescott, Arizona	University of Southern California Los Angeles, California

Medical Social Work

Susan Jean Campbell 4045 East Earll Drive Phoenix, Arizona	Whittier College Whittier, California, and University of California School of Social Welfare

Occupational Therapy

Mary Jo Holman 3252 East Pima Tucson, Arizona	University of Arizona Tucson, Arizona, and University of Southern California Los Angeles, California

Nursing

Kathleen Ann Taillie 1202 West Roger Road Tucson, Arizona	University of Arizona Tucson, Arizona

AMA Loan Program for Medical Students

A FAR-reaching new medical education loan guarantee program is now under way in American medicine.

The goal of this program is to help eliminate the financial barrier to medicine for all who are qualified and accepted by approved training institutions. It is designed to provide a means of financing a substantial portion of the cost of a medical education.

The loan program for medical students, interns and residents is the result of a cooperative effort by American medicine and private enterprise.

The program is administered by the American Medical Association's Education and Research Foundation. The ERF has established a loan guarantee fund. On the basis of this fund, the bank will lend up to $1,500 each year to students. The ERF in effect acts as co-signer. For each $1 on deposit in the ERF's loan guarantee

fund, the bank will lend $12.50.

More than 3,300 students, interns and residents have borrowed more than $6,000,000 through this fund since it was started last February. Physicians and others have contributed almost $700,000 to the loan guarantee fund, which makes possible these loans.

The guarantee fund is almost depleted and more money is needed immediately to keep up the loan program. Eventually it will become self-sustaining as loans are repaid, but right now substantial financial help is needed.

Your check to the AMA-ERF, 535 North Dearborn St., Chicago, will help to keep this important program viable.

Contributions to the Foundation are tax deductible.

AMA-ERF LOANS THROUGH AUGUST 20, 1962

STATE OR POSSESSION	Medical School	Hospital
Alabama	$ 1,400	$ 13,900
Arizona	1,200	6,400
Arkansas	34,500	3,000
California	206,900	109,300
Canal Zone		2,500
Colorado	64,800	24,500
Connecticut	9,200	10,500
Delaware		
District of Columbia	128,300	43,100
Florida	65,400	42,200
Georgia	50,000	25,900
Hawaii		3,000
Illinois	86,900	46,600
Indiana	87,500	18,400
Iowa	70,400	12,300
Kansas		6,700
Kentucky	26,200	4,700
Louisiana	47,500	24,900
Maine		
Maryland	19,500	24,900
Massachusetts	10,000	25,400
Michigan	43,300	36,500
Minnesota	27,400	42,800
Mississippi	45,000	19,600
Missouri	99,000	33,700
Montana		
Nebraska	49,300	4,000
New Hampshire		4,500
New Jersey	2,500	5,000
New Mexico		4,200
New York	25,400	98,700
North Carolina	34,900	14,100
North Dakota	9,700	
Ohio	52,100	67,300
Oklahoma	59,200	16,900
Oregon	7,300	7,000
Pennsylvania	40,700	63,200
Puerto Rico	19,300	5,300
Rhode Island		5,500
South Carolina	23,000	1,500
Tennessee	134,100	21,900
Texas	90,100	52,200
Utah	16,700	22,200
Vermont	10,500	3,000
Virginia	26,300	11,700
Washington	2,100	15,100
West Virginia	28,200	6,600
Wisconsin	48,400	14,200
South Dakota	21,100	

W. B. SAUNDERS COMPANY ANNOUNCES $15,000 WRITING FELLOWSHIP GRANT

To mark its 75th Anniversary in 1963, The W. B. Saunders Company, medical and scientific publishers, are making available $15,000 for an unusual medical writing award. A distinguished committee will select the grantee.

The purpose of this grant is to provide financially for a year's leave of absence for a distinguished investigator who:

1. Has been doing fruitful and significantly important biomedical laboratory research over the past several years.
2. Would like to have time for thought and for preparation of his work in monographic form.

The recipient of the award will not have to agree to publish his monograph with the Saunders Company and will be free to write, instead of a book, a series of journal articles reviewing his research.

Areas of research in the medical sciences and clinical medicine which are acceptable for award consideration are extremely broad with a preference for these which could be translated into clinical usefulness within the forseeable future. The investigator should be a resident of the Americas; but he may be doing or have done his laboratory work outside the Western Hemisphere.

Applications for the Saunders Writing Award may be submitted in an informal style to the Chairman of the Selection Committee. The investigator should indicate briefly the character of his research and where it has been pursued, along with a short resume of his scientific background and a bibliography of his important papers.

Applications should be submitted between January 1, 1963 and May 1, 1963 directly to Dr. Robert F. Loeb, care of W. B. Saunders Comany, West Washington Square, Philadelphia 5, Pa. A decision on the award-winner will be reached by August 1, 1963, and the recipient notified. Formal presentation will be made at an award dinner in October, 1963.

Physician Supply and the Talent Pool: A National Problem

A century ago when a talented young man wished to undertake a profession, he had three major choices: medicine, law or theology. Today the number of choices has increased more than a hundredfold.

The socio-cultural, economic, scientific and other reasons for the changing patterns of career choices among the nation's talented youth have been discussed by dozens of experts. Wolfle, for example, noted that in 1861-1880 28% of all college graduates entered the practice of medicine. By 1951-55 this figure had shrunk to 2%. Whatever the reasons used to explain this change, the fact of the change cannot be denied.

The primary talent pool from which medical students are drawn are those young men and women who are graduated from a college or university with a baccalaureate degree. In the past decade, approximately 75% of all students entering medical school have reached this level of academic achievement.

If one compares two principal indices of interest in the study of medicine, namely, the total number of applicants to medical school and the number of students entering medical school with a baccalaureate degree with the number of first-level baccalaureate degrees granted to male students in a given year—95% of medical students are males—it is possible to construct an index of medicine's relation to the national talent pool. Figure 1 portrays the data of this comparison in ratio form.

What is happening as far as medicine's share of the talent pool is clear-cut. If the total number of applicants to medical school is used as an index of interest in the study of medicine, Figure 1 indicates that ratio between this index and the number of baccalaureate degrees granted to males has dropped from .083 in 1953 to .059 in 1960. This ratio must decline since the total number of applicants to medical school has dropped in recent years while the number of baccalaureate degrees has risen sharply.

With respect to the number of students entering medical school with a baccalaureate degree, the picture is somewhat more complicated and yields a less precipitous decrease.

First, medical schools have, in recent years, accepted an increasing proportion of total applicants. In 1953, 46% of all applicants were accepted. By 1961, 59% of all applicants were being accepted. Given the drop in total applicants, it has been necessary to accept a larger proportion of applicants to fill the same number of places in medical schools.

Secondly, medical educators have given increased attention to the selection process and therefore have been able to maintain the proportion of students holding baccalaureate degrees in face of the drop in applicants. Thus the number of students entering United States medical schools with baccalaureate degrees has increased but at *a slower rate* than the overall number of baccalaureate degrees granted.

The trend of medicine attracting a smaller and smaller share of the pool of the nation's talented youth has continued throughout this past decade. This ratio will continue to decline until the greatly needed expansion in medical school enrollments becomes possible by construction that will expand existing facilities and create new facilities.

RATIO OF NUMBER OF MEDICAL APPLICANTS AND NUMBER OF ENTERING MEDICAL STUDENTS HOLDING BACCALAUREATE DEGREES TO NUMBER OF FIRST LEVEL DEGREES GRANTED TO MALE STUDENTS

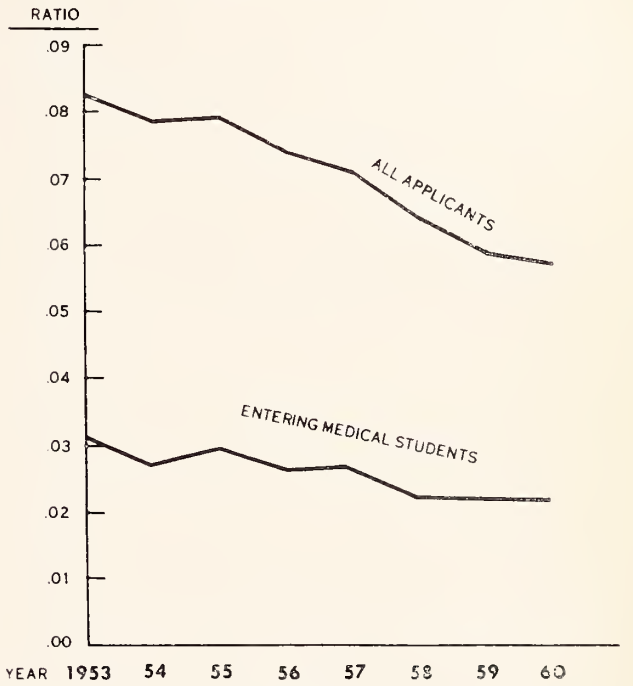


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Submitted by the Division of Operational Studies of the AAMC. Source of information will be furnished on request.

From Association of American Medical Colleges' "Datagrams" (Vol. 3, No. 12)

Topics of Current Medical Interest

Joint Statement on Narcotic Addiction in the United States

The American Medical Association and the National Research Council for many years have been concerned about and have studied the narcotic drug addiction problem.

To assist in carrying out its studies, the American Medical Association collaborated with the American Bar Association in establishing a joint committee which made an interim report to the two organizations in 1958, and a final report in 1959.

It was concluded that there was widespread public and professional misunderstanding about this subject, specifically (1) that the Federal Bureau of Narcotics believes drug addiction to be a crime; a belief that is contrary to the federal law and its application by the bureau, and (2) that the American Medical Association proposes the establishment of community ambulatory clinics for the withdrawal of narcotics from addicts or for the continuing maintenance of addicts on narcotics; a belief that is contrary to the official position of the American Medical Association.

Historically society has found it necessary to employ legal controls to prevent the spread of certain types of illness that constitute a hazard to the public health. Drug addiction is such a hazard.

The successful and humane withdrawal of individuals addicted to narcotics in the United States necessitates constant control, under conditions affording a drug-free environment, and always requires close medical supervision.

The successful treatment of narcotic addicts in the United States requires extensive post-withdrawal rehabilitation and other therapeutic services.

The maintenance of stable dosage levels in individuals addicted to narcotics is generally inadequate and medically unsound. And ambulatory clinic plans for the withdrawal of narcotics from addicts are likewise generally inadequate and medically unsound.

As a result of these conclusions the American Medical Association and the National Research Council oppose on the basis of present knowledge such ambulatory treatment plans.

These two organizations support (1) after complete withdrawal, follow-up treatment for addicts, including that available at rehabilitation centers, (2) measures designed to permit the compulsory civil commitment of drug addicts for treatment in a drug-free environment, (3) the advancement of methods and measures towards rehabilitation of the addict under continuing civil commitment, (4) the development of research designed to gain new knowledge about the prevention of drug addiction and the treatment of addicted persons, and (5) the dissemination of factual information on narcotic addiction.

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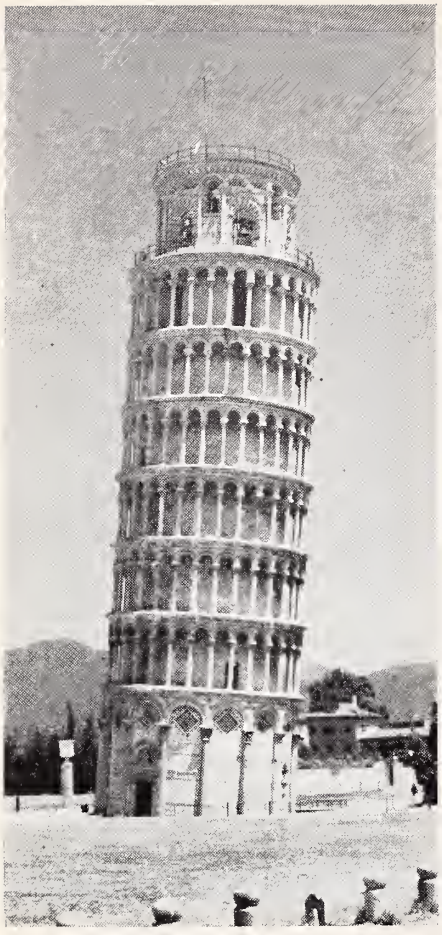
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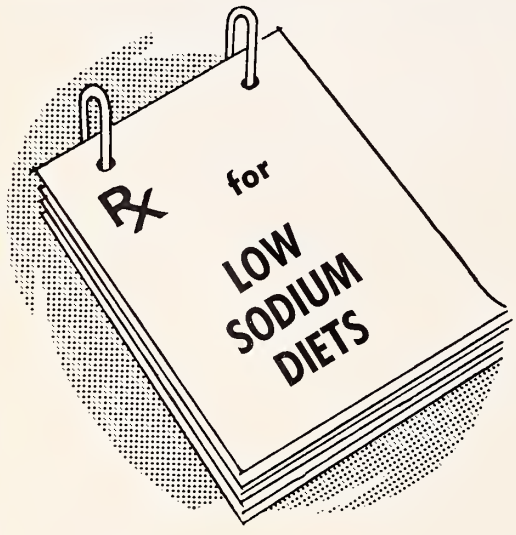
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1. **Methyl-Testosterone-Thyroid in Treating Impotence, A. S. Titeff, General Practice, Vol. 25, No. 2, February, 1962, pp 6-8.**
2. **Thyroid-Androgen Relations, L. Hellman, et al., The Jrl. of Clin. Endocrinology and Metabolism, August 1959.**

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AS they used to say when knighthood was in flower and the high society lads wore tin tuxedos and galvanized iron pants and played polo in the peasants' potato patches, I'd like to tilt a lance today for the medical profession.



Mr. Maidenburg

Thanks to a lot of political pollywoggery, many are looking on nearly every doctor as a treasonable lout, a hater of humanity and worse. The situation arises because of the Head Man in the White House, also known as Chairman of the Board of the firm of Kennedy, Kennedy, Shriver, Caroline, Macaroni (and now a third Kennedy), Inc., has been beating the tom-toms for his private brand medicare bill.

Mr. Kennedy and his fellow warblers can growl at the American Medical Association. But if the AMA growls back — well!!

Let me agree there are some doctor-bums, just as there are in every other trade or profession. I'm sure the Summit County Medical Society and the AMA both were organized primarily to protect the people from being plundered by bad doctors. Locally, at least, doctors do a top job of policing their profession against inepts, gougers, and the like.

I know doctors in Summit County who sneer at the Summit County Medical Society and some who disagree with the AMA.

I might say, in passing, that I have disagreed with the doctors once in a while, in my pursuit of news stories.

I have argued (with no success) that if some doctor does an outstanding bit of work in a critical moment and saves a life, the other doctors should not quarrel with my desire to print the saviour-doctor's name. Some medics disagree on this so violently you'd think I was proposing the Beacon Journal give away do-it-yourself surgery kits with each subscription.

If a hound barks and wakens a family in a burning household, the pooch gets his name and picture into the paper, a nice meaty bone and perhaps a medal.

If a passerby jumps into a lake and rescues a drowning man, he's a hero to all. But if a doctor does something heroic, mentioning his name comes under the heading of "cheap advertising" to some of my M.D.-type friends.

But let's get back to today's theme.

FOR some reason, too many have the harebrained notion that the young man who sweats his way through medical school at his own expense, perhaps goes on to specialize, works for a couple years at starvation wages as an intern or resident and then enters private practice, immediately becomes public property.

I don't hear Brother Kennedy urging the American Bar Association to do something through Social Security so that I can get a free lawyer in my old age, or a government paid one.

And I don't hear anyone yodeling for free engineering services from someone who's gone through Carnegie Tech or Akron University or Purdue.

Not too long ago we had a man out to take a look at a bunged up garbage disposal gadget. He walked in, looked at the machine and said, "It is out of date. We can't fix it. The charge will be $6 for the call and $2.50 for the *diagnosis.*"

Now here's where I needed Social Security, but is anyone pressing anyone about this?

Oh I know I'm generalizing and singing off key in a painful effort to make a point. But what I'm trying to get at is this: Anyone can defend his personal rights, but let a doctor do so, and the hacks are after him.

Some think if a doctor lives in a nice home up in Fairlawn Heights it's solid proof that he's a gouger, a sinner and a leech on the soul of mankind. The fact that the doctor who can afford a 13-cylinder auto and servants and trips to Paris got so because he was a GOOD doctor and thereby got a lot of business, seldom occurs to anyone.

I suppose I'll be accused of being a rotter if I say I sympathize with the doctors who went on

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strike in the Canadian province of Saskatchewan. I don't blame them one bit. Just what right has the Saskatchewan government to *tell* the doctors —or *any* other profession—just how they'll work and at what wages, and all that?

I wonder what the reaction would be if Governor DiSalle urged the legislature to pass a bill telling our rubber workers they *must* produce a given number of tires per shift and at a certain wage, etc. Boy! Would the screams be loud, and rightfully so.

I'm not against health insurance for oldsters. But Mr. Kennedy acts as if he invented being sorry for those who can't make medical ends meet.

I think it was doctors who took the lead in setting up Blue Cross and Blue Shield and in furthering the many insured medical plans. Doctors saw, long before any of us, that tragedy could be piled on tragedy when long range illness strikes a family.

I suppose someone will now holler, "Oh yeah? The doctors pushed those things so's they could get paid."

Well, why shouldn't they get paid? Don't we have strikes in varied industries every day over such unimportant things as pay?

THERE are doctors who don't; but the vast majority of medics not only practice medicine, but continue a hard study of it, all their lives. They keep up with new techniques and drugs.

Do you think they do this so they can charge higher fees? No, they do it so they can save and lengthen lives.

Do you think the huge number of oldsters are around today because of filter cigarettes and frozen pizzas? We have more oldsters because the medical profession has studied and searched and found ways of lengthening our life span by decades.

But all this is forgotten in the howls of the hacks who'll chomp at anything, doctors included, if it'll make a vote issue.

There are doctors who agree with Mr. Kennedy's plan; and others who disagree most angrily. I think the latter have a perfect right to their opinions, without being berated. And I'm getting sick and tired of these liberals — liberals with others' money and ability — who think they have a paid up license to prey on the medical profession.

I don't like a small segment of our doctors because, frankly, they are always weeping about "free clinical work" when asked to support the United Fund, and because they duck community responsibilities — as do too many others. But the vast majority of our doctors ought to have statues erected to them daily — not reviled by hacks.

IN CLOSING: Go ahead and be for some plan for old age medical assistance if you like. But in the process don't go painting the medical profession as an assortment of criminals merely because it disagrees with President Kennedy. What you really ought to do is pray every night that the good doctors stand firm for their rights, that they stay healthy and get wealthy. If they do, you'll be better off, too.

Ben Maidenburg
Akron Beacon Journal
Akron, Ohio

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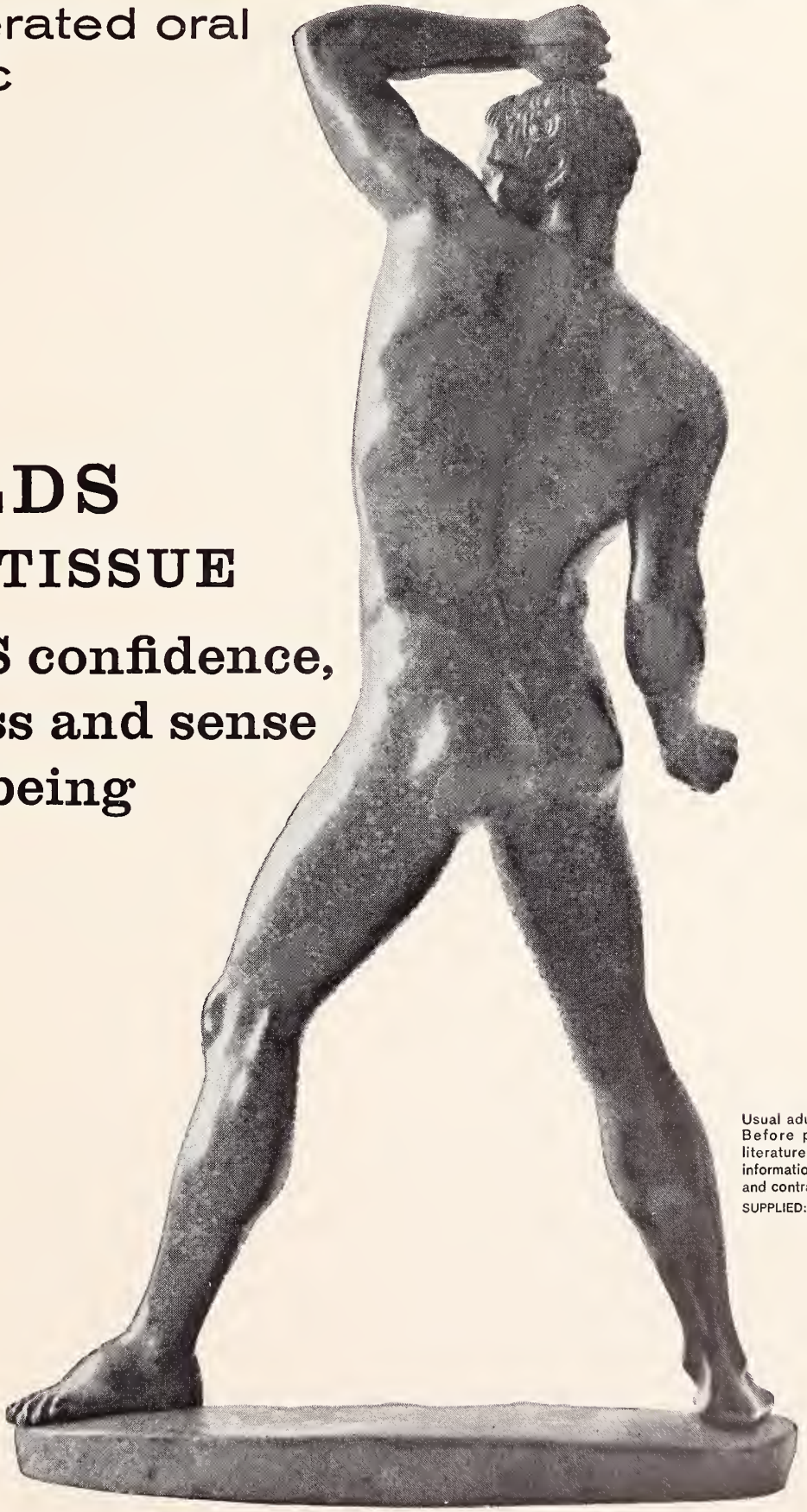
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Future Medical Meetings and Postgraduate Education

American College of Surgeons Plan January Meeting in Phoenix

The American College of Surgeons will hold its first 1963 sectional meeting in Phoenix, Arizona, January 21-23.

More than 450 surgeons from the southwestern area of the United States are expected to attend this scientific meeting to hear discussions on palliative management of patients with malignant neoplasms, treatment of multiple injuries, surgical complications during pregnancy, treatment of burns, hypothermia, present status of tissue transplantation, plus two "How I do It" clinics on miscellaneous subjects, medical motion pictures, and scientific papers. Sessions will be held in the Hotel Westward Ho. All doctors of medicine may attend.

Dr. MacDonald Wood, Phoenix, chairman of the advisory committee on local arrangements, and his Arizona committee have chosen outstanding surgeons from the mid- and southwest as guest speakers. Among those from other medical centers are the following:

Stanley R. Friesen, Kansas City, Kansas
William P. Longmire, Jr. Los Angeles, California
Edwin B. Boldrey, San Francisco, California
Milton L. McCall, Pittsburgh, Pennsylvania
Carl A. Moyer, St. Louis, Missouri
Curtis P. Artz, Jackson, Mississippi
Henry Swan, Denver, Colorado.

Dr. Loyal Davis, Chicago, Illinois, president of the college, will preside at the Fellowship luncheon.

University of Utah Announces Medical Continuation Courses

The University of Utah College of Medicine announces the following schedule of medical continuation courses. Guest speakers who are outstanding in their field will assist the local faculty in each course.

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March 4-8	General Practice Review
April 1-4	Obstetrics
April 18-19	Pediatrics and Psychiatry

Regional Meetings Future Dates

January 13-19, 1963
University of Colorado
School of Medicine
General Practice Review
Denver, Colorado

March 5-8, 1963
Colorado Medical Society
Midwinter Clinical Session
Denver, Colorado

March 29-31, 1963
Annual Meeting
American Society of Internal Medicine
Denver, Colorado

May 1-4, 1963
Arizona Medical Association
Pioneer Hotel
Tucson, Arizona

Arizona Academy of General Practice Announces Seminar on Psychiatry

The Arizona Academy of General Practice in association with The University of Southern California School of Medicine, Department of Psychiatry and Medicine, has announced its third annual seminar, "Psychiatry in the Practice of Medicine." The meeting will be held February 9-10, 1963 at the Arizona State Hospital, Phoenix, Arizona.

Principal speakers will be:
Edward Stainbrook, M.D.
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Chairman of the Department of Psychiatry
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Associate Director: William T. Foley, M.D., F.A.C.P.

February 11-15:

Modern Physiological Concept of Cardiovascular Disease

Presbyterian Medical Center, San Francisco, California

Director: Arthur Selzer, M.D., F.A.C.P.

March 4-8:

Physiological Aspects of Cardiapulmonary Disease

Indiana University Medical Center, Indianapolis, Indiana

Director: John B. Hickam, M.D., F.A.C.P.

Co-Director: Joseph C. Ross, M.D.

June 10-14:

Current Topics in Internal Medicine

State University of Iowa, Iowa City, Iowa

Director: William B. Bean, M.D., F.A.C.P.

Associate Director: Ernest O. Theilen, M.D., F.A.C.P.

June 24-28:

Internal Medicine: Current Physiological Concepts In Diagnosis and Treatment

University of Cincinnati College of Medicine, Cincinnati, Ohio

Director: Richard W. Vilter, M.D., F.A.C.P.

Co-Directors: Charles E. Kiely, M.D. and John R. Braunstein, M.D., F.A.C.P.

June 24-28:

The Psychosomatic Illnesses

University of Colorado Medical Center, Denver, Colorado

Director: Herbert S. Gaskill, M.D., F.A.C.P.

LOS ANGELES CONFERENCE ON PEDIATRIC ANESTHESIOLOGY

The Childrens Hospital of Los Angeles will hold the First Clinical Conference in Pediatric Anesthesiology on January 26-27, 1963.

The program will be devoted to the practical aspects of the preanesthetic, anesthetic, and postanesthetic management of infants and children. A model operating room will demonstrate modern anesthesia equipment and monitors.

Guest faculty will include Drs. Leonard Bachman, M. Kathleen Belton, and Robert M. Smith.

For further information write:

Dr. M. Digby Leigh
Childrens Hospital of Los Angeles
4614 Sunset Boulevard
Los Angeles 27, California

Annual Cardiac Symposium January 18-19 in Phoenix

The Sixth Annual Cardiac Symposium of the Arizona Heart Association will be held January 18-19, 1963 at the Arizona Biltmore Hotel, Phoenix, Arizona.

Guest speakers will be:

Dr. Howard Burchell
Mayo Clinic
Rochester, Minnesota

Dr. Jesse E. Edwards
Department of Pathology
and Clinical Laboratories
The Charles T. Miller Hospital
Saint Paul, Minnesota

Dr. Alfred P. Fishman, Director
Cardiorespiratory Laboratory
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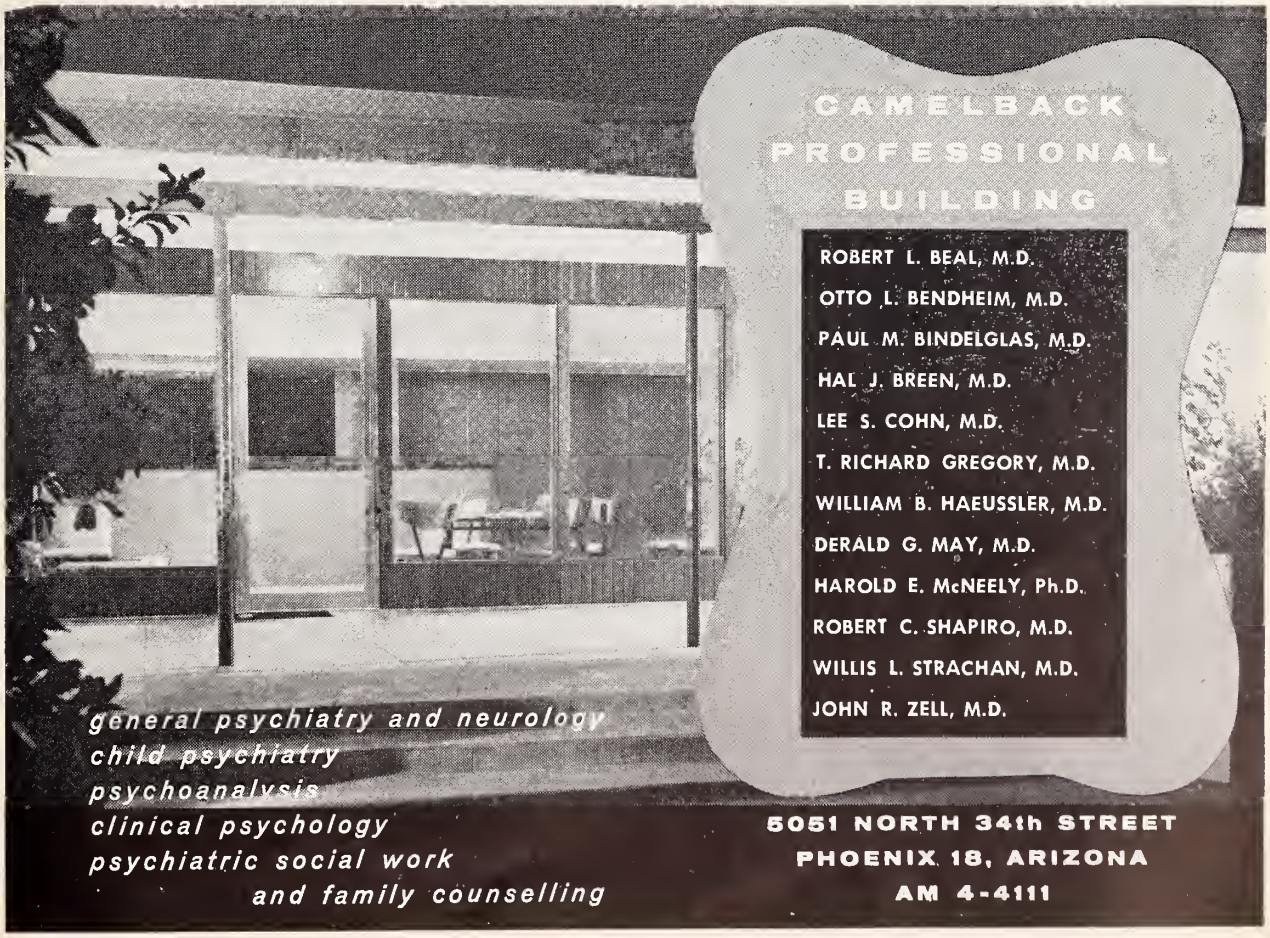
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